PCComplete Technical Notes for Sable Computers

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PCComplete Corporate Sales

This guide was created exclusively for Sable Technologies by PCComplete Corporate Sales.
Written by Darryl Wattenberg with Fred Hodge, Marshall Miller, and Patrick Obloy.
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Foreword

This technical information has been assembled for use by Sable Installers and Technicians. The information in this guide is targeted for people with technical knowledge of PC hardware and Windows NT. As such, we ask that this information not be distributed to end users without a technical background.

Information in this guide is the most current available at time of printing. As with the rest of the computer industry, this information is subject to change on a regular basis. We have provided revision numbers in the top right corner of the right-hand pages to help you identify the age of this information. Please do not make and/or distribute copies of this guide. Contact Darryl at “darryl@pccomplete.com” or by calling 248/545-4211 for additional copies of this technical information.

If you know of an issue with a PCComplete computer which should be added to this guide, please let us know. The best way to contact us with additions is by e-mail at “pcc@pccomplete.com” or by fax at 248/545-4284 (attention Darryl). If neither option is available, call Darryl at 248/545-4211.

Obtaining PCComplete Service

PCComplete has developed special warranties and service plan for the Sable computers. These include original warranty and extended warranty (for machine 2-3 years old) for PCComplete assembled computers, and the extended service agreement for PCComplete and non-PCComplete assembled computers. These warranties and service agreement allow for a loaner PC to be sent (only after review and approval by PCComplete technician) by basic overnight service to the customer name under the warranty/service agreement. Other shipping methods may be available at additional cost to the customer. Some upgrade customers do not have any of these warranties or service agreements in place. To reduce the cost for customers needing replacement PCs during the Y2K transition, this special 30 day parts only warranty was developed. Information about the type of coverage and expiration of that coverage may be obtained through PCComplete. The Annual Extended Warranty Agreement and Annual Extended Service Agreement enrollment kits are avalible on the PCComplete web site in the “Products” section under the “For Sable Customers” topic.

Before calling for service on a PCComplete assembled POS computer, please have the following information available:

- customer’s company name
- computer serial number (located on the back of the computer)
- customer contact information (including the person with whom you have been working with)
- pcAnywhere phone number for the computer in question
- complete description of the problem and any action taken

During normal business hours contact PCComplete by calling 248/545-4211. After hours please use the pager support by calling 800/354-5322 and punching in the customer’s phone number.

Processor Jumper Settings

Identifying the main board

Before setting the speed of the processor, it is necessary to identify the type of board which you are working on. An AMD K-6 or K6-2 should be using either the ASUS TXP4-X or P5A main boards. Intel Pentium II computers may use one of five main boards (P2L97, P2B, P2B-F, P2-99, or P3B-F). Intel Celerons may use any Slot 1 board (P2L97, P2B, P2B-F, P2-99, or P3B-F) though a slot one adapter is required on some 333MHz and higher processors. Pentium IIIs are restricted to 100MHz Slot 1 boards (P2B, P2B-F, P2-99, or P3B-F). On all of the main boards the model is printed in white ink. It is generally easier to check the BIOS information for the main board model and revision. Power on the computer and check in the lower left corner of the screen. There will be a string of characters on the last line and it should include either "<TXP4X>", "<<P5A>>", "<P2L97>", "<<P2B>>", "<<P2B-F>>", or "<<P2-99>>" in roughly the middle.

Identifying the AMD-K6 speed

There are two different types of AMD-K6 processors. To identify the difference, look at the top of the fan over the processor. Some of the K6 processors will have a silver foil sticker in the center of the fan which is located top of the processor which will have the speed and voltage settings printed on it. Others will not have a silver sticker in the center of the fan. In this case the fan must be removed from the processor. On the top of the processor, stamped in the metal plate, is the speed and voltage information. Once this information has been obtained, make sure to secure the processor fan to the processor and verify that it is tight and cannot be slipped or bumped off.

Identifying the Pentium II/III (Slot 1) speed

The Pentium II/III slot 1 processor is the least difficult to identify its speed. Look at the top of the processor (the edge facing out of the case) and look at the first line of the imprinted codes. There will be a space about three-quarters of the way into the line. Look at the six numbers just before that space. The first three indicate the speed, the last three indicate the cache size. Thus, a 333MHz processor's first line could look like this; "80523PX333512 SL2S5" while a 266MHz processor could look like this; "B80522P266512 SL2QB."

Identifying the Pentium III (FPGA) speed

Later models of the Pentium III processor where shipped in a socket 370 configuration called "FPGA." Though no FPGA boards have been used in Sable systems to date, the FPGA processors are installed in to a Slot 1 adapter card for installation in to the standard Slot 1 main boards. Identification of the processor speed requires removal of this slot 1 adapter, and the processor fan. It is not recommended that you attempt this as it can could serious problems with the heat dissipation of the processor (the thermal putty placed between the heatsync and the processor will no be properly intact). Additionally, all of the Pentium III processors have the locked multiplier prohibiting modification to the processor's operating speed. It is suggested that Pentium III processors not be modified in the field. If there is a need to do so, contact a PCComplete technician for more information.

Identifying the Celeron (Slot 1) speed

The Slot 1 Celeron has shipped from PCComplete in one speed – 333MHz. If you do however need to check the speed of the processor it is located on the back side of the card to the left side. It should have a

white background with the second line of text reading similar to this, “333/66 COSTA RICA”. The “333” is the processor speed. This processor is set exactly the same as the Pentium II.

Identifying the Celeron (Socket 370/PPGA) speed

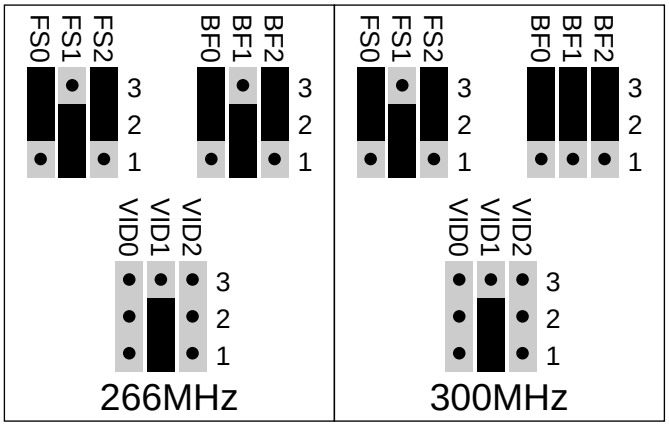
More recent Celeron based systems from PCComplete use Socket 370 (a.k.a. PPGA) processors. When installed on the Slot 1 main boards they use a Socket 370 to Slot 1 adapter. To check the speed of the processor will require that the processor be removed from the adapter. First, remove the fan from the adapter card. The processor should now be exposed. While holding the processor, lift the processor release lever away from the adapter card. Carefully remove the processor from the socket and look at the underside of the processor. Below the Intel and Celeron logos is a line of text (ie. B80524P333) which is the processor’s ID. The last three digits of this line is the processor’s speed. **Be extremely careful when replacing the processor.**

Underclocking for compatibility

Though this is not recommended by chip makers, it has been known to work as a temporary solution in some cases. This practice works only on AMD K6 and early Intel Pentium II machines shipped by PCComplete. Newer Intel processors have locked their multiplier, so regardless of which multiplier you select, it will continue to operate at its predetermined setting even if the board says otherwise. Changing the bus speed is not recommended as it will frequently result in an unstable system and may case damage to many of the system’s components. It is recommended that processors be configured based on their actual speed and the setting in this book for reliability and stability.

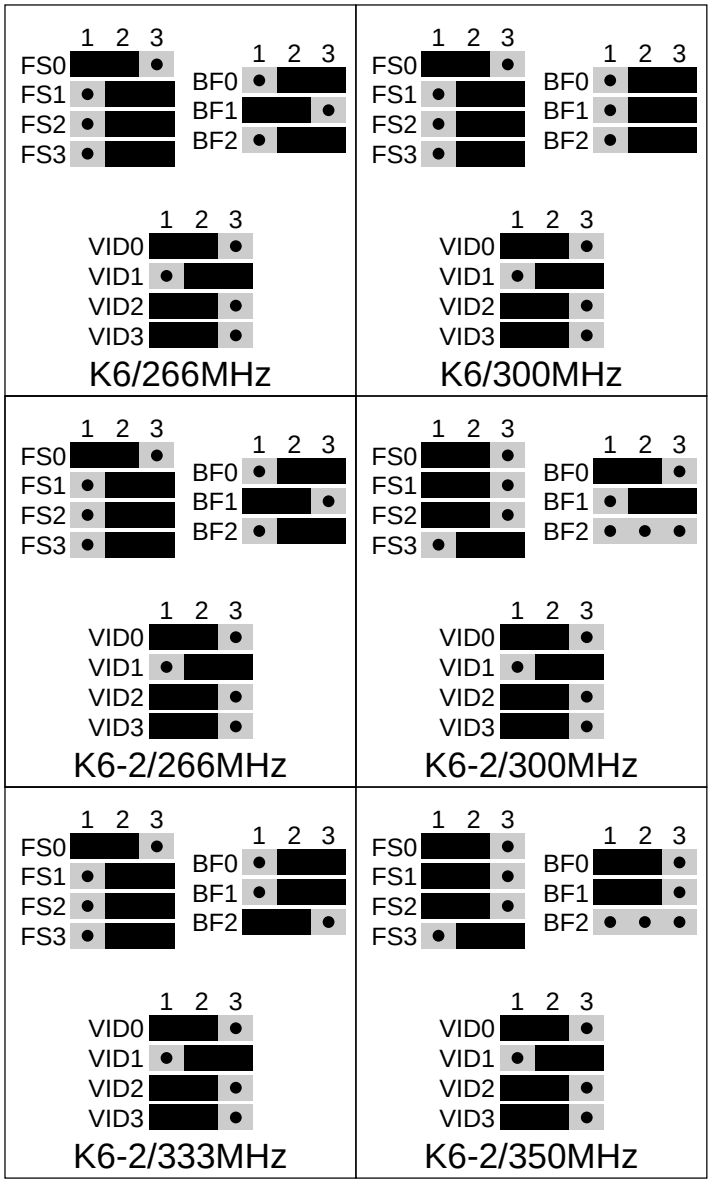
ASUS TXP4-X

The following jumper settings are only for AMD-K6 processors on the ASUS TXP4-X main board.

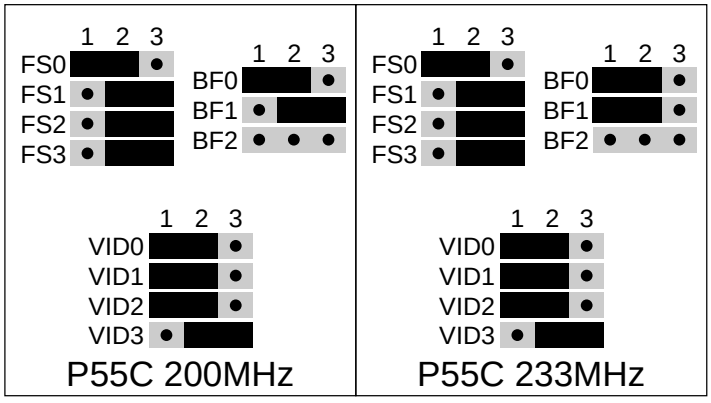


ASUS P5A

The following jumper settings are only for AMD-K6 & K6-2 processors on the ASUS P5A main board.

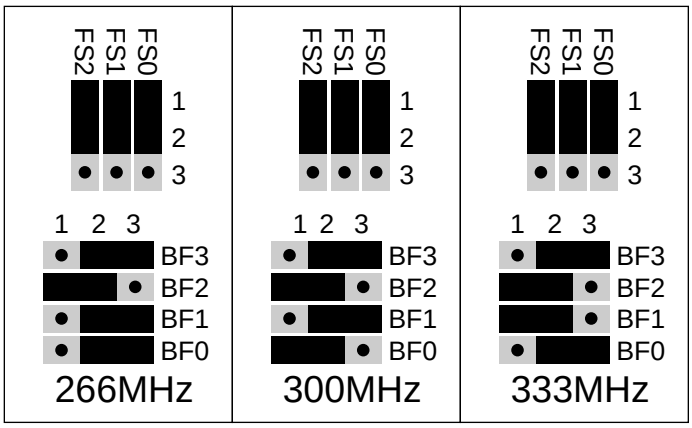


The following jumper settings are only for Intel Pentium processors with MMX on the ASUS P5A main board.



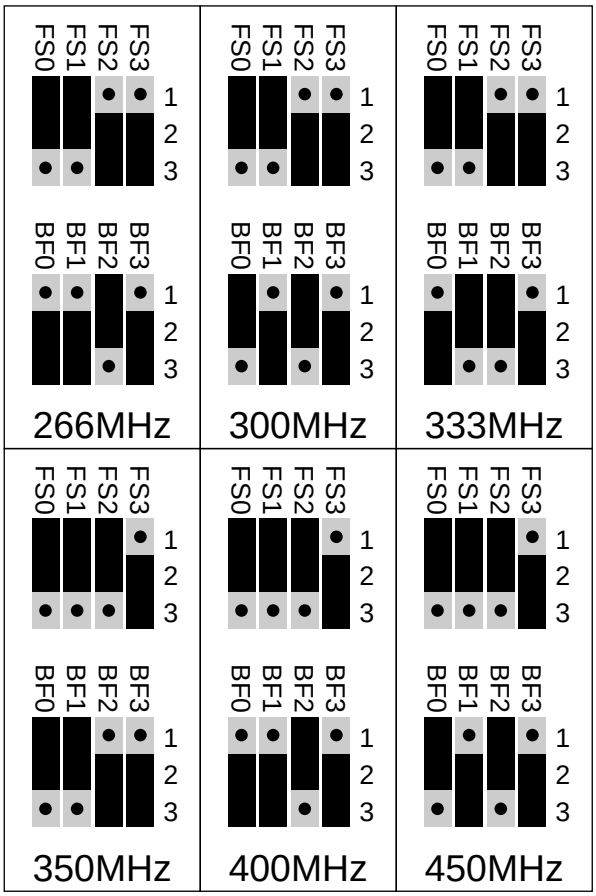
ASUS P2L97

The following jumper settings are only for Intel Pentium II and Celeron processors under 350MHz on the ASUS P2L97 main board.



ASUS P2B

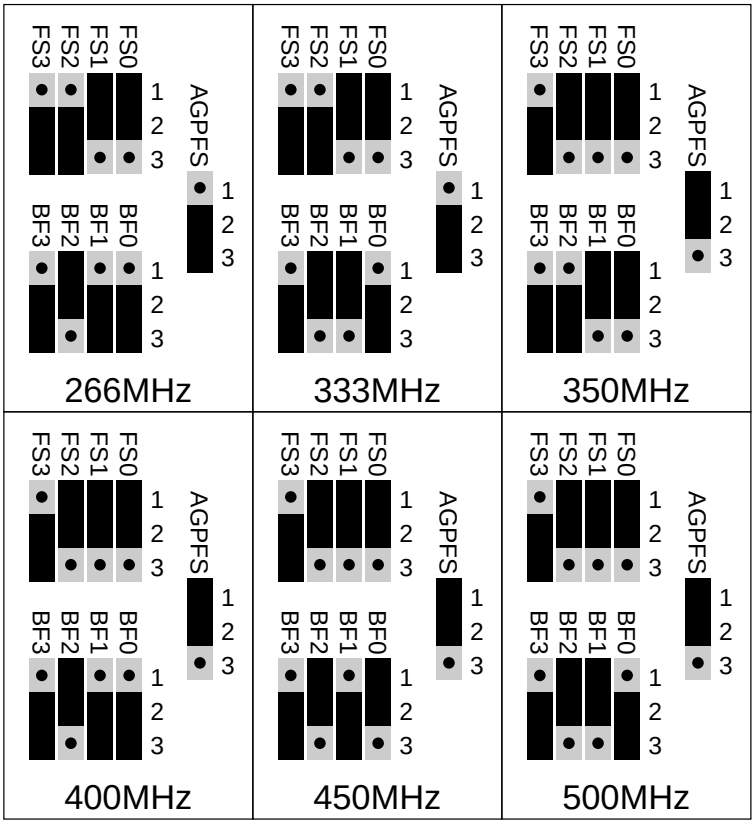
The following jumper settings are only for Intel Pentium II processors on the ASUS P2B main board.



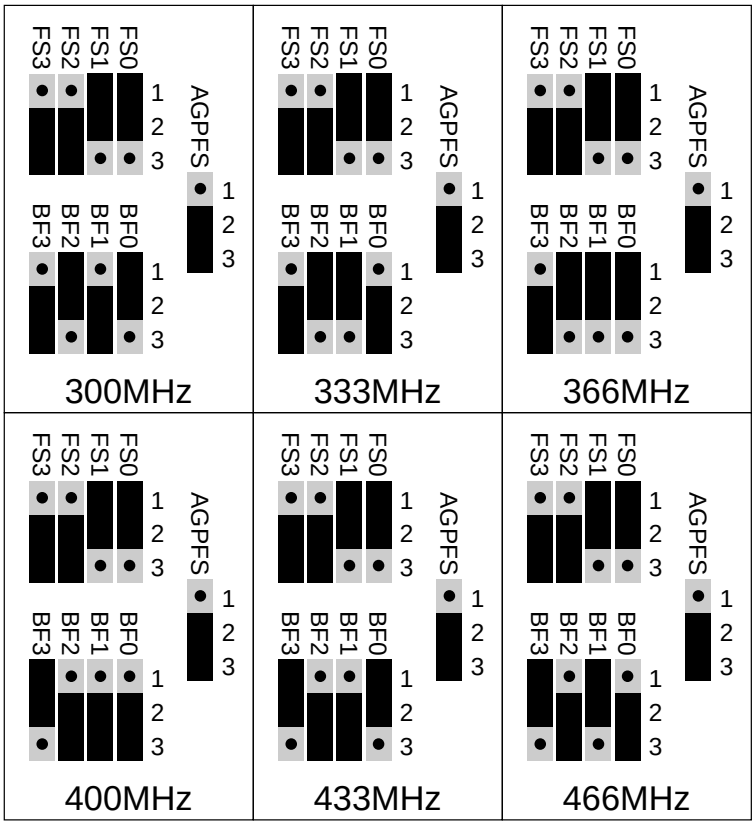
(FS3 is only used on main board version 1.10 and higher.
For earlier board versions only set jumpers FS0, FS1, and FS2)

ASUS P2B-F

The following jumper settings are only for Intel Pentium II/III processors on the ASUS P2B-F main board.

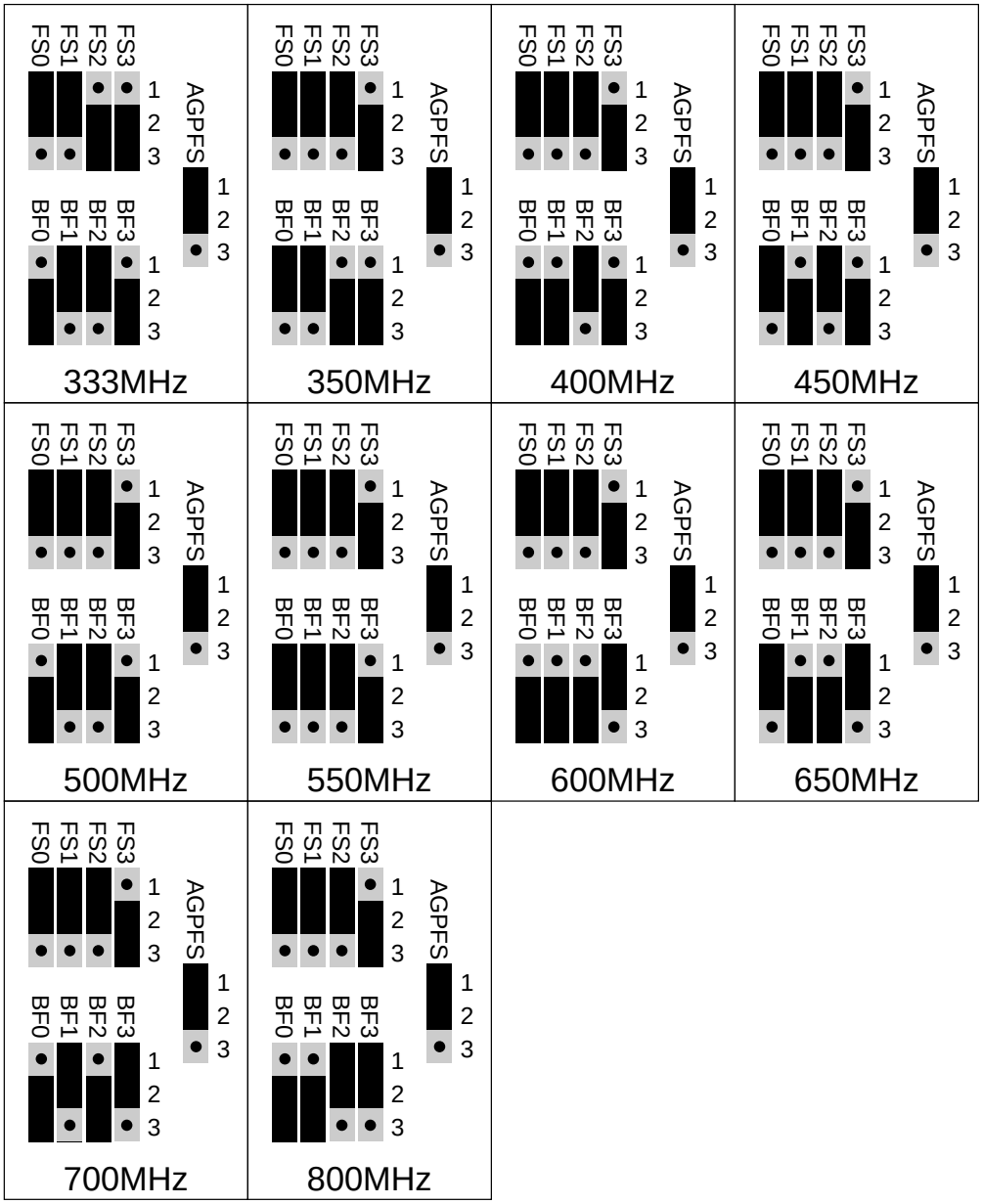


The following jumper settings are only for Intel Celeron processors on the ASUS P2B-F main board.

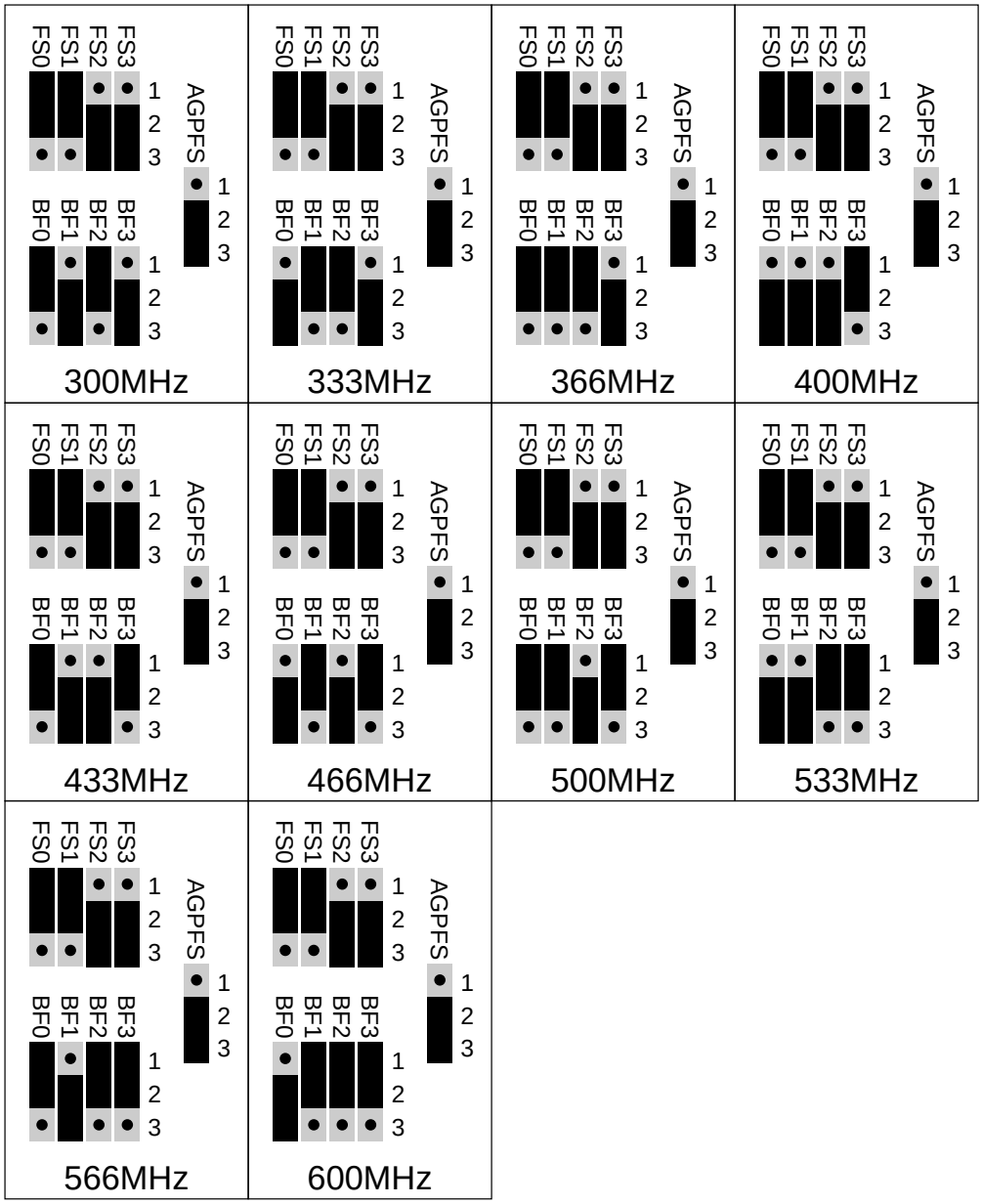


ASUS P2-99

The following jumper settings are only for Intel Pentium II/III processors on the ASUS P2-99 main board.



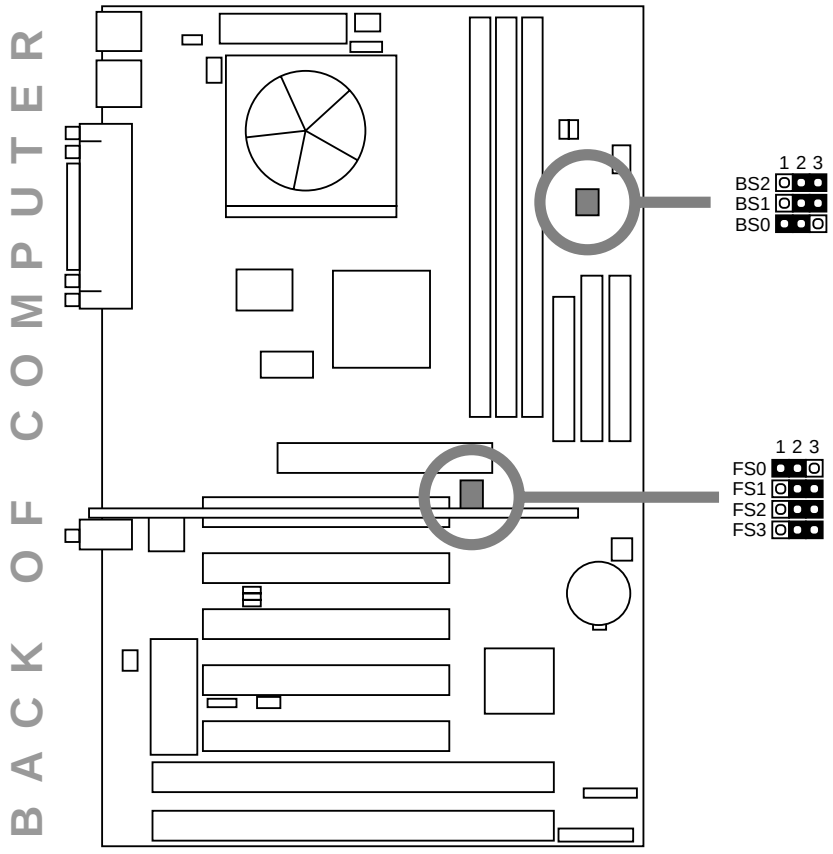
The following jumper settings are only for Intel Celeron processors on the ASUS P2-99 main board.



AMD K6-2/333 processor stall fix

1. Shut down the computer and after the power is off, unplug the power to the computer and remove the monitor's connection to the computer. Remove the computer's cover (there are six screws on the mini-tower case).

2. Remove the screw holding in the video card. Remove the video card.



3. Locate the "FS" series of jumpers. They should be immediately under the card which you just removed (see illustration below). The jumpers should be set to:

FS0	FS1	FS2	FS3
1-2	2-3	2-3	2-3

(FS0 should be the jumper toward the top of the case and the 1-2 position being toward the back of the case.)

4. Replace the video card (make sure it is completely seated) and fasten it down.

5. Locate the "BS" series of jumpers near the RAM and drives (see the illustration below).The jumpers should be set to:

BS2	BS1	BS0
2-3	2-3	1-2

(BS2 should be the jumper toward the top of the case – which is opposite the "FS" series – and the 1-2 position is toward the back of the case.)

6. Replace the cover and fasten down all six screws. Reconnect the monitor's cable and the power to the computer.

7. Make sure all cables are connected and secure, then power on the computer, press and hold the “Delete” key to enter BIOS.

8. Use the arrow keys to select “BIOS Features Setup” and press the “Enter” key. Use the arrow keys again to select the “Quick Power On Test,” use the “Page Up” key to set it to “Disable”. Press “Esc” to return to the main BIOS screen. Press “F10” to save and exit, confirm with “y” and press return.

9. Allow the computer to run through it’s tests and confirm that the processor still reads an AMD K6-2/333 and that the correct amount of RAM is displayed.

10. After the O/S loads and everything appears to be working correctly, restart the computer and enter the BIOS again. Use the arrow keys to select “BIOS Features Setup” and press the “Enter” key. Use the arrow keys again to select the “Quick Power On Test,” use the “Page Up” key to set it to “Enable”. Press “Esc” to return to the main BIOS screen. Press “F10” to save and exit, confirm with “y” and press return.

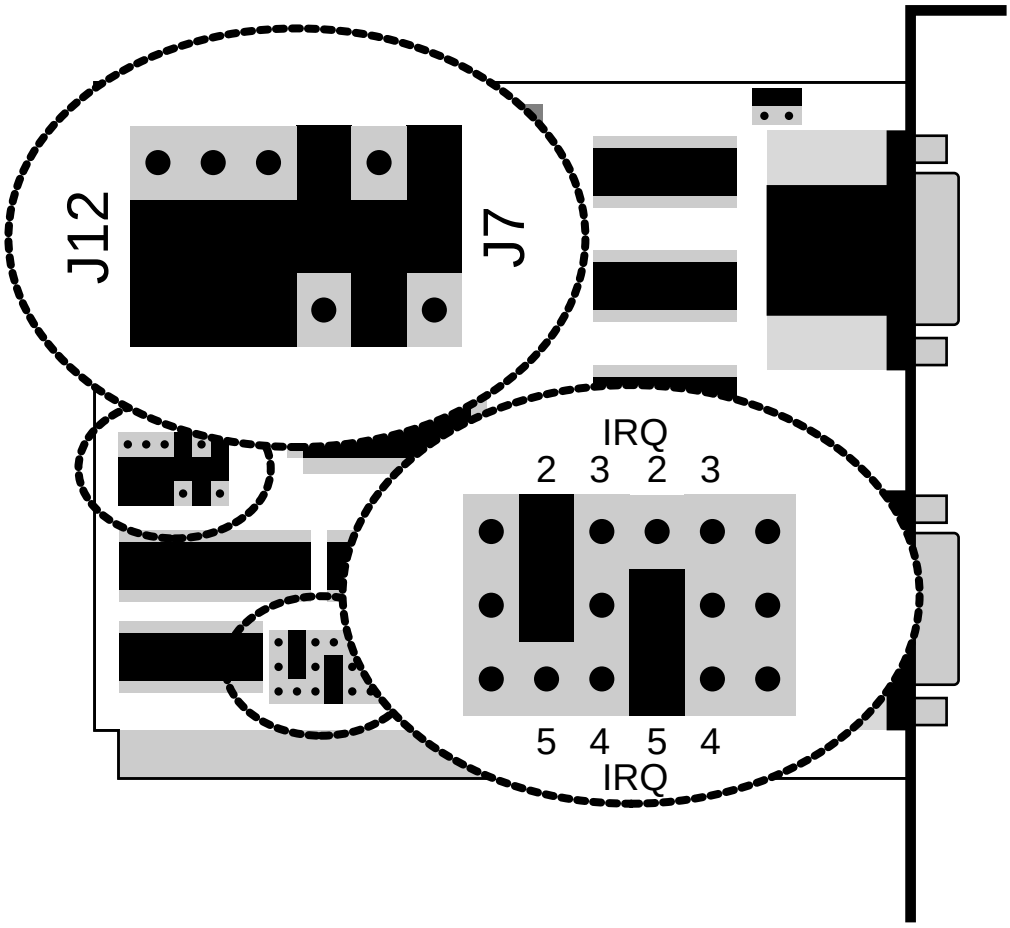
I/O Card Jumper & Software Settings

Identifying the I/O card

There have been five different I/O cards used in the Sable computers as of April 2000. The original card used was the STB DSP/550 which has two DB9 ports and is ISA. The next card was the SIIG Serial Expander 4S which has one DB9 and one DB25 and is again ISA. The original PCI card used was the SIIG Dual CyberSerial PCI controller which has two DB9 ports. The SIIG Single CyberSerial PCI controller has only one DB9 port per card. Currently, the LAVA SSerial-PCI card is being used which also only have one port.

STB DSP/550

The first I/O card installed in PCComplete's Sable PCs was the STB DSP/550 I/O card. This ISA card supports two serial and one parallel port (though only the serial ports are enabled for the Sable configuration).



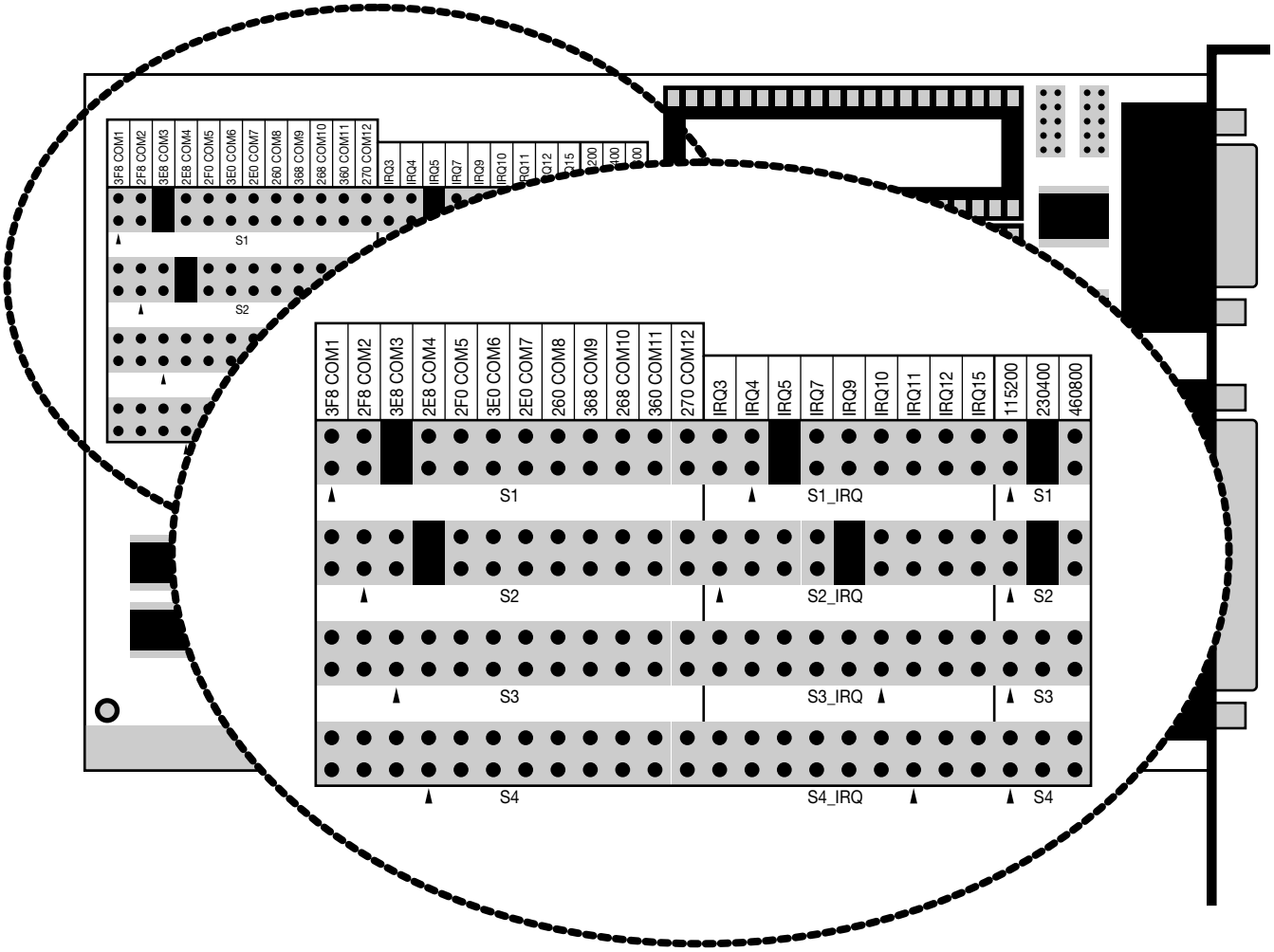
When the card is configured this way, Windows NT should have the following port settings:

COM	IRQ	Address
1	4	3f8
2	3	2f8
3	5	3e8
4	9	2e8

It should also be noted that with this configuration DOS and Windows95 will not be able to use COM4.

SIIG Serial Expander 4S

The SIIG Serial Expander 4S card was selected as the second card for the Sable PCs. This ISA card supports two serial and allows for an upgrade to use two additional serial ports.



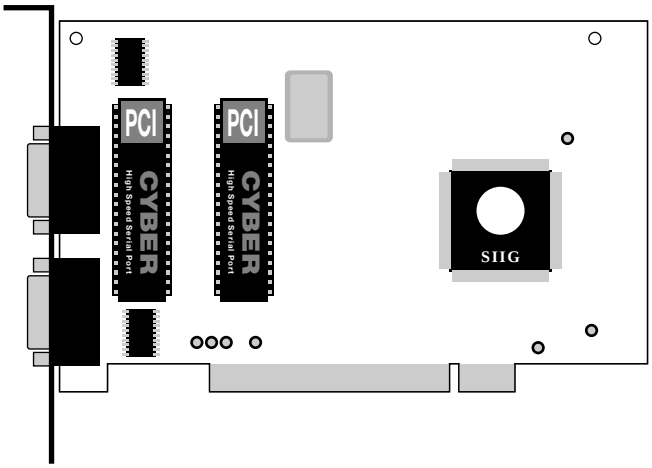
When the card is configured this way, Windows NT should have the following port settings:

COM	IRQ	Address
1	4	3f8
2	3	2f8
3	5	3e8
4	9	2e8

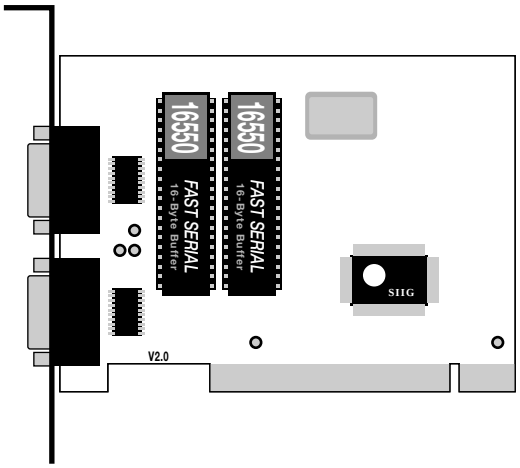
SIIG CyberSerial Dual PCI

The SIIG CyberSerial is the first PCI serial card used on Sable POS systems. Though this card is more costly than the traditional ISA alternatives, PCI is better supported by the operating system and pcAnywhere. These PCI cards use only one IRQ for both COM ports.

The CyberSerial card has shipped in two different version. The early version is a mid-size card while the second version is a short card. Each of these cards require different drivers and are not interchangeable. The correct version should have been included with either the computer or I/O card.



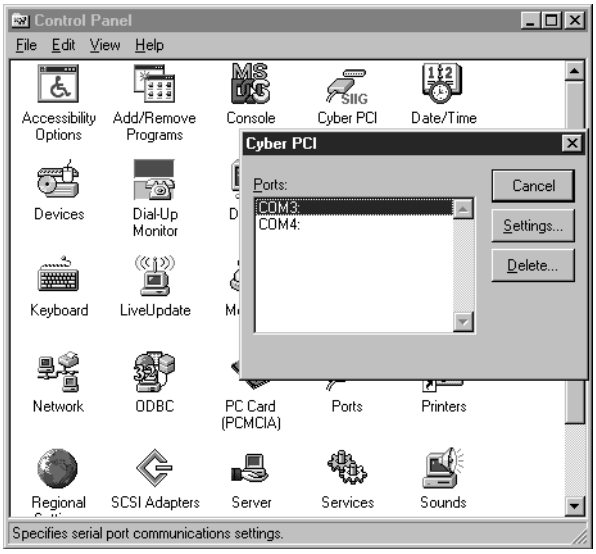
Version 1 (at 50% actual size)



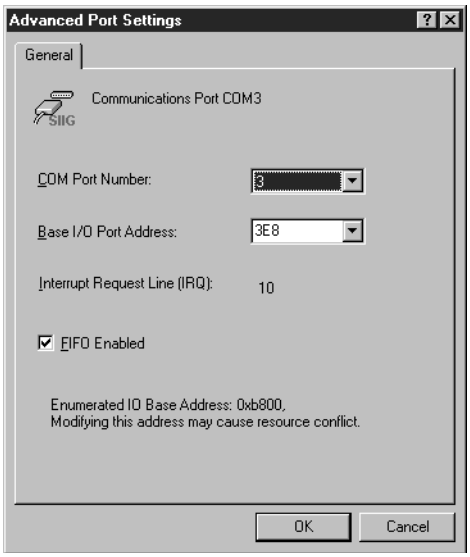
Version 2 (at 50% actual size)

Unlike the ISA cards, the PCI cards require a software driver. The CyberSerial card uses a control panel called “Cyber PCI” to configure the card. In the Cyber PCI control panel, you should have the following settings:

COM	IRQ	Address
3	10	3e8
4	10	2e8



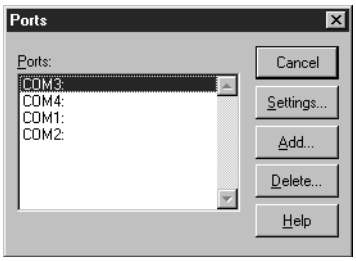
The Cyber PCI control panel



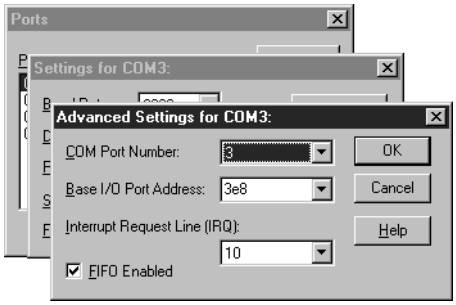
The Advanced Port Settings

When the card is configured this way, Windows NT Ports control panel should have the following port settings:

COM	IRQ	Address
1	4	3f8
2	3	2f8
3	10	3e8
4	10	2e8



Windows NT's Port control panel

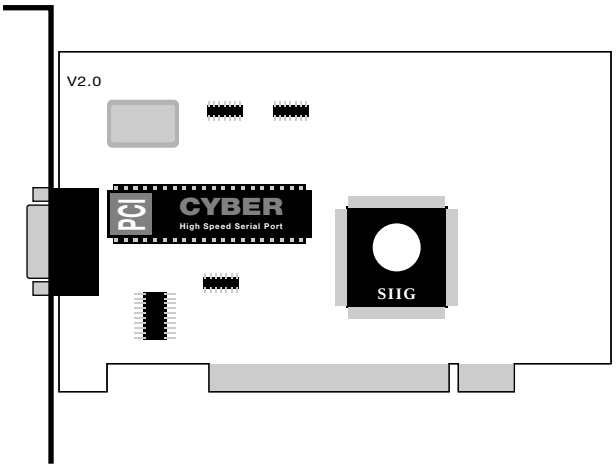


The Advanced Settings

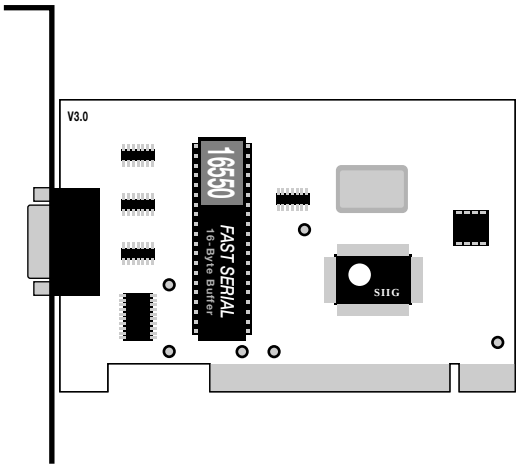
SIIG CyberSerial Single PCI

The SIIG CyberSerial Single port is the second PCI card used on Sable POS systems. Though this card is more costly than the traditional ISA alternatives or even the dual port card, PCI is better supported by the operating system and pcAnywhere. Unlike the dual cards, these PCI cards use one IRQ for each card.

The CyberSerial card has shipped in two different version. The early version is a mid-size card while the later version is a short card. Each of these cards require a different driver and are not interchangeable. The correct version should have been included with either the computer or I/O card.



Version 2 (at 50% actual size)



Version 3 (at 50% actual size)

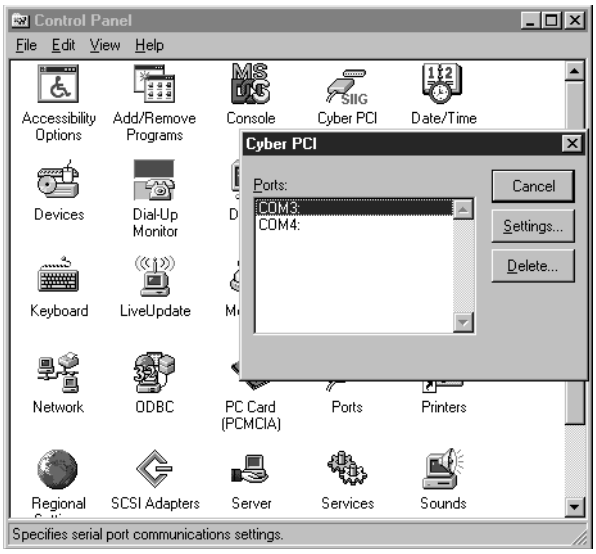
In order for these cards to function properly with Sable, it is vital that at least one PCI slot be left open between two of these cards.

Unlike the ISA cards, the PCI cards require a software driver. The CyberSerial card uses a control panel called “Cyber PCI” to configure the card. In the Cyber PCI control panel, you should have the following settings:

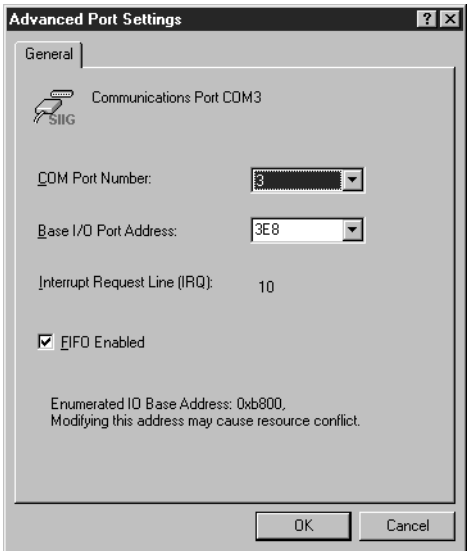
COM	IRQ	Address
3	5	3e8
4	10	2e8

When only one card is installed, the settings should look like this:

COM	IRQ	Address
3	10	3e8



The Cyber PCI control panel



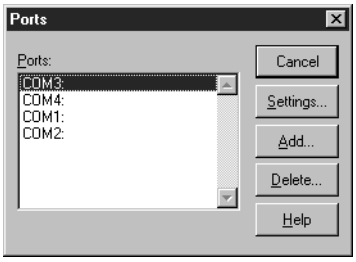
The Advanced Port Settings

When the card is configured this way, Windows NT Ports control panel should have the following port settings:

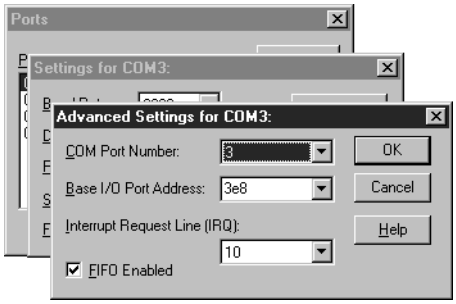
COM	IRQ	Address
1	4	3f8
2	3	2f8
3	5	3e8
4	10	2e8

Or like this for a single card:

COM	IRQ	Address
1	4	3f8
2	3	2f8
3	10	3e8



Windows NT's Port control panel

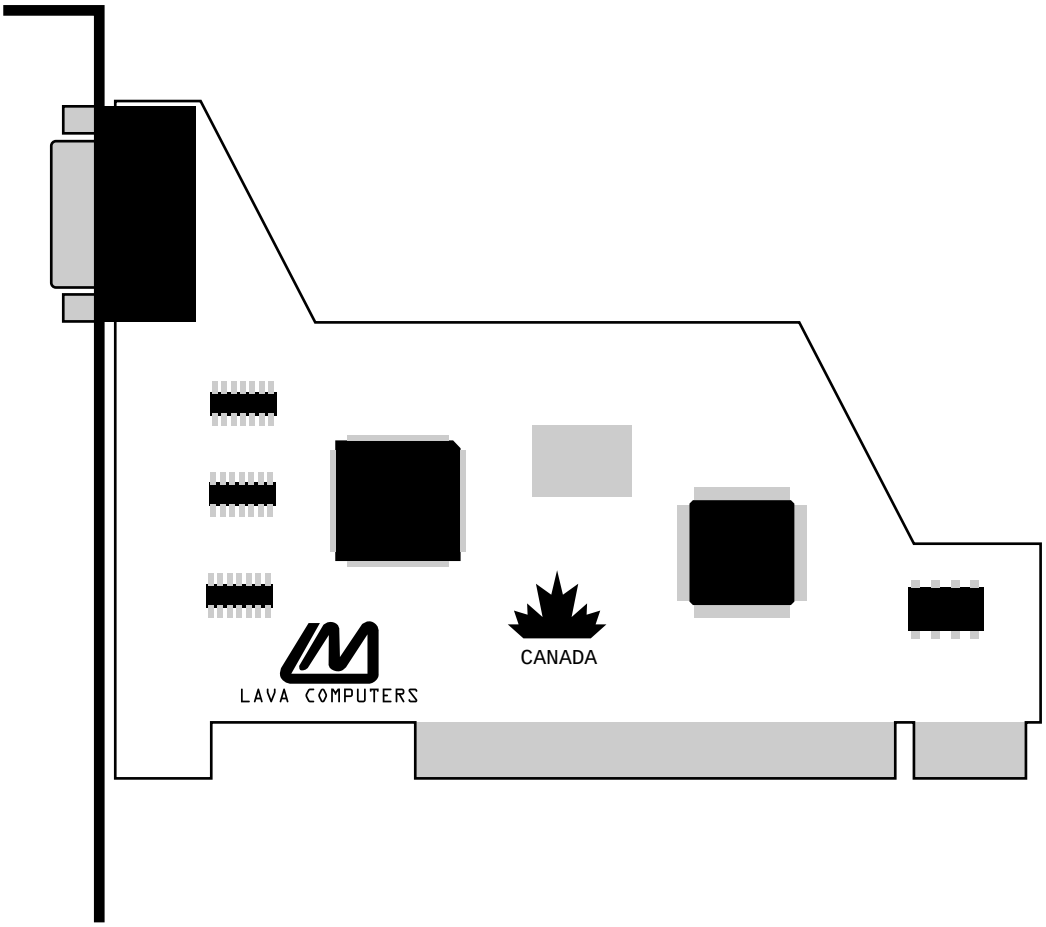


The Advanced Settings

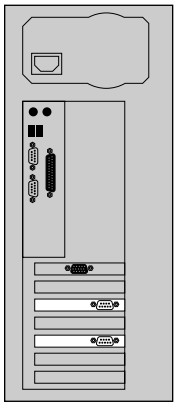
These cards maybe added individually to add one extra serial port. In order to ensure proper operation, they need at least one slot between the two cards.

LAVA SSerial-PCI

The LAVA SSerial-PCI port is the fifth serial I/O card used on Sable POS systems. The switch was made to this card in mid-April 2000 due to problems with TCAs on other serial I/O cards.

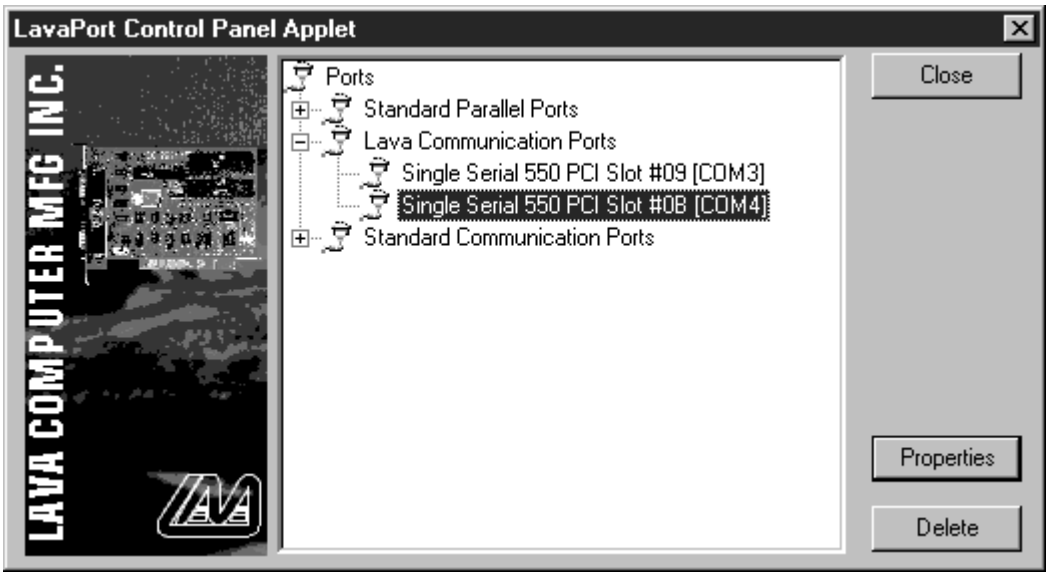


In order for these cards to function properly with Sable, it is vital that at least one PCI slot be left open between two of these cards (see the illustration to the right).



Unlike the ISA cards, the PCI cards require a software driver. The LAVA SSerial-PCI card uses a control panel called “LavaPort” to configure the card. This software must be installed from a floppy disk to work properly. Installing from a CD-ROM or hard drive will cause problems. If you do not have the original floppy disk available, copy the contents the directory from the CD-ROM or hard drive image before attempting the install.

In the LavaPort control panel, you should not have to change anything. If the setting do not match the screen shot below, remove the software and reinstall the driver from the floppy drive and not the CD-ROM or hard drive copy.



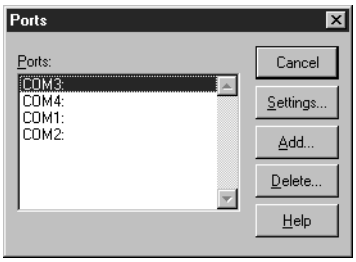
The LavaPort control panel after a proper installation

When the card is configured this way, Windows NT Ports control panel should have the following port settings:

COM	IRQ	Address
1	4	3f8
2	3	2f8
3	Default	Default
4	Default	Default

Or like this for a single card:

COM	IRQ	Address
1	4	3f8
2	3	2f8
3	Default	Default



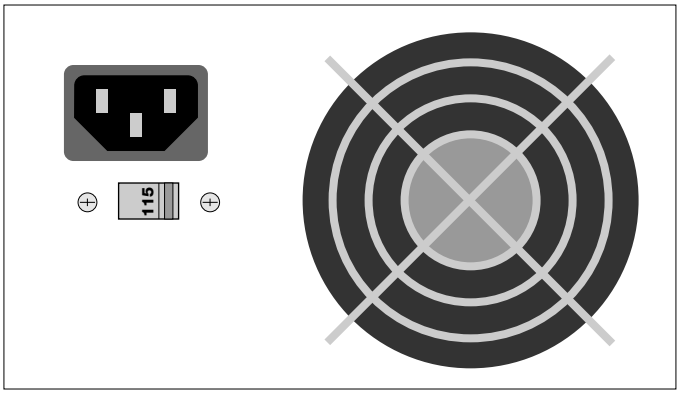
Windows NT's Port control panel *The Advanced Settings*

These cards maybe added individually to add one extra serial port. In order to ensure proper operation, they need at least one slot between the two cards.

Power Selection Switch

Power selection switch

On the back of the power supply is a switch to select between 115 and 230 volt current. This switch **must** be set for the 115 volt setting or the computer will not function properly.



Occasionally, this switch has changed positions in shipping, so it is advisable to double check the power switch before turning on the computer.

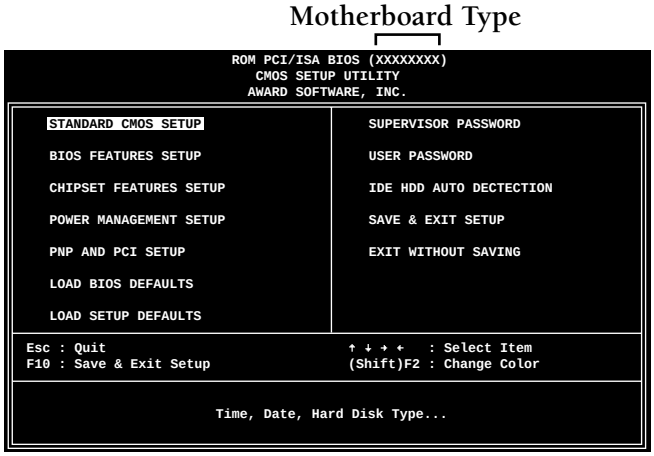
BIOS Settings

Information about using BIOS

To access the BIOS, hold down the “delete” key during the memory count (right after the computer is powered on).

Once in BIOS, use the arrow keys to navigate through the menus. The “Enter” key will select the current highlighted menu. Generally, the “page up” and “page down” keys will cycle through options. To return to the main menu from any of the sub-menus, press the “esc” key.

To determine which main board you are working with, check at the top center of the screen. In parens – “()” – will be the main board type (TXP4-X, P5A, P2L97, P2B, P2B-F, or P2-99). Newer main boards (including the P3B-F) will have a completely different look. Since only a few of those have been shipped so far they will be covered in later revisions to this tech note.



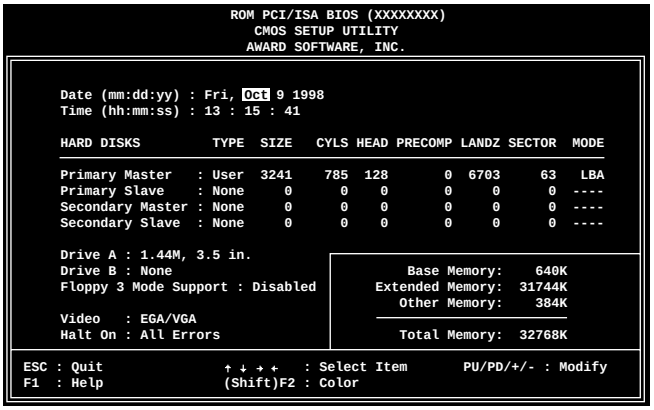
Recommended BIOS settings

The following are simulations of the BIOS screens for the recommended settings on Sable computers. These settings will vary from main board to main board but are generally the similar. When there are differences between the main board, check under each screen for which main board it is associated with (see above for assistance on identifying the board you are working with).

All of these settings are modified from the BIOS Default settings. Under each of the screen shots will be a list of the settings for each of these screens which change from these default settings. When attempting to restore the BIOS to their optimal condition, it is recommended that the “LOAD BIOS DEFAULTS” be used before changing any of the following settings.

Standard CMOS Setup

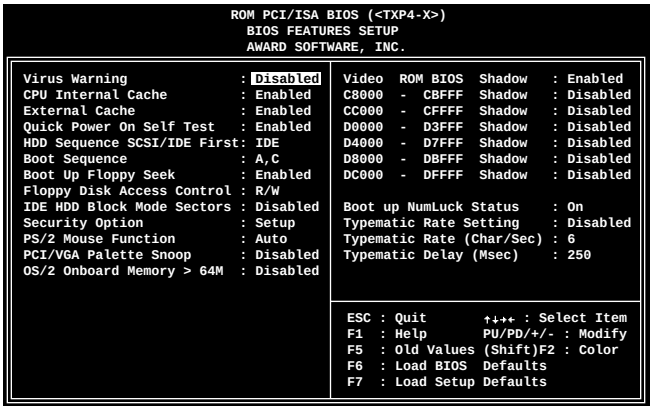
This screen will vary in its settings based on the type of hard drive installed in the system.


ROM PCI/ISA BIOS (XXXXXXXX)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.
Date (mm:dd:yy) : Fri, Oct 9 1998
Time (hh:mm:ss) : 13 : 15 : 41
HARD DISKS TYPE SIZE CYLS HEAD PRECOMP LANDZ SECTOR MODE
Primary Master : User 3241 785 128 0 6703 63 LBA
Primary Slave : None 0 0 0 0 0 0 ----
Secondary Master : None 0 0 0 0 0 0 ----
Secondary Slave : None 0 0 0 0 0 0 ----
Drive A : 1.44M, 3.5 in.
Drive B : None
Floppy 3 Mode Support : Disabled
Video : EGA/VGA
Halt On : All Errors
Base Memory: 640K
Extended Memory: 31744K
Other Memory: 384K
Total Memory: 32768K
ESC : Quit
F1 : Help
: Select Item
(Shift)F2 : Color
PU/PD/+/- : Modify

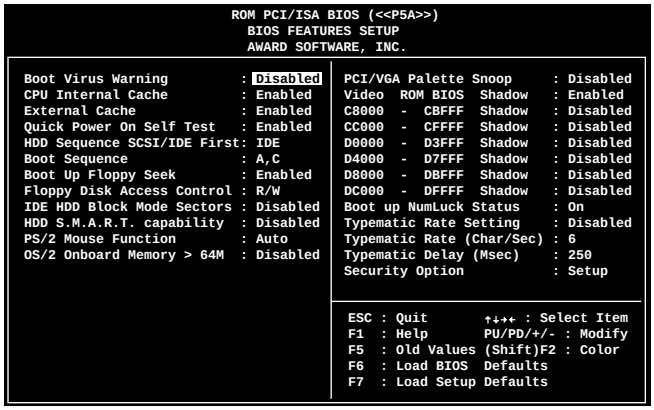
TXP4-X, P5A, P2L97, P2B, P2B-F & P2-99

The only issue on this screen are the settings for the drives under Primary Master. Except for the Primary Master, all drives should be set for "None." ("Auto" will not cause any problems with the operation of the computer though it does slow it down during power-up.)

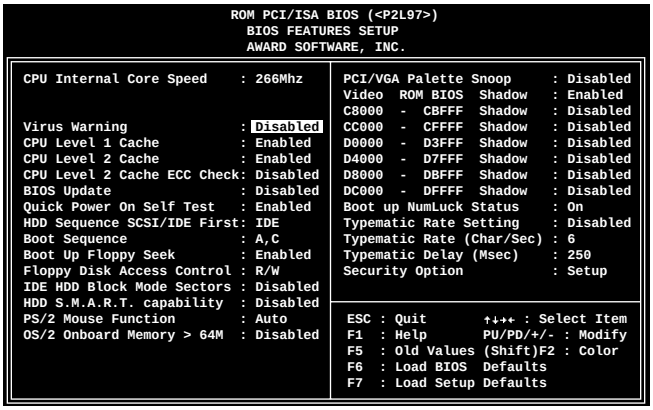
BIOS Features Setup


ROM PCI/ISA BIOS (<TXP4-X>)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.
Virus Warning : Disabled
CPU Internal Cache : Enabled
External Cache : Enabled
Quick Power On Self Test : Enabled
HDD Sequence SCSI/IDE First: IDE
Boot Sequence : A,C
Boot Up Floppy Seek : Enabled
Floppy Disk Access Control : R/W
IDE HDD Block Mode Sectors : Disabled
Security Option : Setup
PS/2 Mouse Function : Auto
PCI/VGA Palette Snoop : Disabled
OS/2 Onboard Memory > 64M : Disabled
Video ROM BIOS Shadow : Enabled
C8000 - CBFFF Shadow : Disabled
CC000 - CFFFF Shadow : Disabled
D0000 - D3FFF Shadow : Disabled
D4000 - D7FFF Shadow : Disabled
D8000 - DBFFF Shadow : Disabled
DC000 - DFFFF Shadow : Disabled
Boot up NumLuck Status : On
Typematic Rate Setting : Disabled
Typematic Rate (Char/Sec) : 6
Typematic Delay (Msec) : 250
ESC : Quit
F1 : Help
F5 : Old Values (Shift)F2 : Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults
: Select Item
PU/PD/+/- : Modify

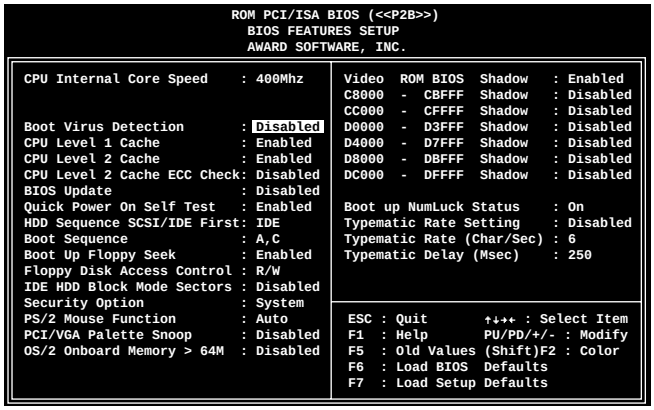
TXP4-X


ROM PCI/ISA BIOS (<<P5A>>)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.
Boot Virus Warning : Disabled
CPU Internal Cache : Enabled
External Cache : Enabled
Quick Power On Self Test : Enabled
HDD Sequence SCSI/IDE First: IDE
Boot Sequence : A,C
Boot Up Floppy Seek : Enabled
Floppy Disk Access Control : R/W
IDE HDD Block Mode Sectors : Disabled
HDD S.M.A.R.T. capability : Disabled
PS/2 Mouse Function : Auto
OS/2 Onboard Memory > 64M : Disabled
PCI/VGA Palette Snoop : Disabled
Video ROM BIOS Shadow : Enabled
C8000 - CBFFF Shadow : Disabled
CC000 - CFFFF Shadow : Disabled
D0000 - D3FFF Shadow : Disabled
D4000 - D7FFF Shadow : Disabled
D8000 - DBFFF Shadow : Disabled
DC000 - DFFFF Shadow : Disabled
Boot up NumLuck Status : On
Typematic Rate Setting : Disabled
Typematic Rate (Char/Sec) : 6
Typematic Delay (Msec) : 250
Security Option : Setup
ESC : Quit
F1 : Help
F5 : Old Values (Shift)F2 : Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults
: Select Item
PU/PD/+/- : Modify

P5A


ROM PCI/ISA BIOS (<P2L97>)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.
CPU Internal Core Speed : 266Mhz
Virus Warning : Disabled
CPU Level 1 Cache : Enabled
CPU Level 2 Cache : Enabled
CPU Level 2 Cache ECC Check: Disabled
BIOS Update : Disabled
Quick Power On Self Test : Enabled
HDD Sequence SCSI/IDE First: IDE
Boot Sequence : A,C
Boot Up Floppy Seek : Enabled
Floppy Disk Access Control : R/W
IDE HDD Block Mode Sectors : Disabled
HDD S.M.A.R.T. capability : Disabled
PS/2 Mouse Function : Auto
OS/2 Onboard Memory > 64M : Disabled
PCI/VGA Palette Snoop : Disabled
Video ROM BIOS Shadow : Enabled
C8000 - CBFFF Shadow : Disabled
CC000 - CFFFF Shadow : Disabled
D0000 - D3FFF Shadow : Disabled
D4000 - D7FFF Shadow : Disabled
D8000 - DBFFF Shadow : Disabled
DC000 - DFFFF Shadow : Disabled
Boot up NumLuck Status : On
Typematic Rate Setting : Disabled
Typematic Rate (Char/Sec) : 6
Typematic Delay (Msec) : 250
Security Option : Setup
ESC : Quit
F1 : Help
F5 : Old Values (Shift)F2 : Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults
: Select Item
PU/PD/+/- : Modify

P2L97


ROM PCI/ISA BIOS (<<P2B>>)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.
CPU Internal Core Speed : 400Mhz
Boot Virus Detection : Disabled
CPU Level 1 Cache : Enabled
CPU Level 2 Cache : Enabled
CPU Level 2 Cache ECC Check: Disabled
BIOS Update : Disabled
Quick Power On Self Test : Enabled
HDD Sequence SCSI/IDE First: IDE
Boot Sequence : A,C
Boot Up Floppy Seek : Enabled
Floppy Disk Access Control : R/W
IDE HDD Block Mode Sectors : Disabled
Security Option : System
PS/2 Mouse Function : Auto
PCI/VGA Palette Snoop : Disabled
OS/2 Onboard Memory > 64M : Disabled
Video ROM BIOS Shadow : Enabled
C8000 - CBFFF Shadow : Disabled
CC000 - CFFFF Shadow : Disabled
D0000 - D3FFF Shadow : Disabled
D4000 - D7FFF Shadow : Disabled
D8000 - DBFFF Shadow : Disabled
DC000 - DFFFF Shadow : Disabled
Boot up NumLuck Status : On
Typematic Rate Setting : Disabled
Typematic Rate (Char/Sec) : 6
Typematic Delay (Msec) : 250
ESC : Quit
F1 : Help
F5 : Old Values (Shift)F2 : Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults
: Select Item
PU/PD/+/- : Modify

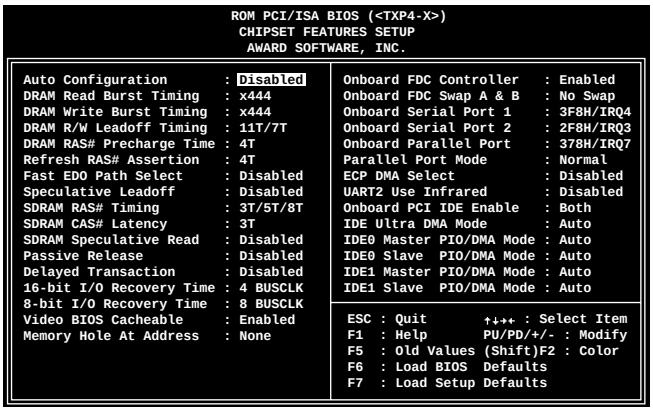
P2B (similar to P2B-F & P2-99)

The "Quick Power On Self Test" can optionally be changed to "Enabled." Again, this does not effect the operation of the computer but does improve the speed at power on. If you suspect a memory problem make sure to set this option to "Disabled."

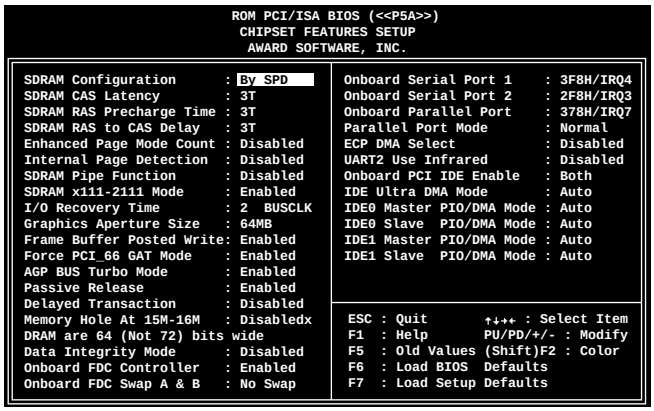
On the P2L97, P2B, P2B-F, and P2-99, we recommend disabling the “BIOS Update” option. This will avoid any accidental corruption of the BIOS.

We have found that by setting the Boot Sequence to “C Only” we eliminate several service calls a week. This eliminates the possibility of having the customer accidentally leave a back-up or restore floppy in the drive which prevents the computer from booting. If booting from floppy or CD-ROM is necessary, this can be enabled more quickly than a single service call would normally take.

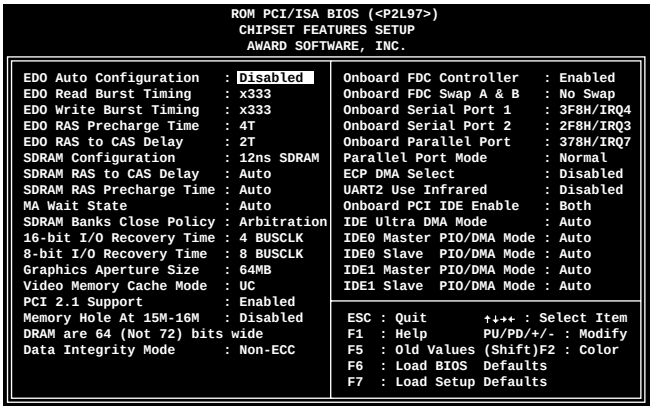
Chipset Features Setup


ROM PCI/ISA BIOS (<TXP4-X>)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.
Auto Configuration : Disabled
DRAM Read Burst Timing : x444
DRAM Write Burst Timing : x444
DRAM R/W Leadoff Timing : 11T/7T
DRAM RAS# Precharge Time : 4T
Refresh RAS# Assertion : 4T
Fast EDO Path Select : Disabled
Speculative Leadoff : Disabled
SDRAM RAS# Timing : 3T/5T/8T
SDRAM CAS# Latency : 3T
SDRAM Speculative Read : Disabled
Passive Release : Disabled
Delayed Transaction : Disabled
16-bit I/O Recovery Time : 4 BUSCLK
8-bit I/O Recovery Time : 8 BUSCLK
Video BIOS Cacheable : Enabled
Memory Hole At Address : None
Onboard FDC Controller : Enabled
Onboard FDC Swap A & B : No Swap
Onboard Serial Port 1 : 3F8H/IRQ4
Onboard Serial Port 2 : 2F8H/IRQ3
Onboard Parallel Port : 378H/IRQ7
Parallel Port Mode : Normal
ECP DMA Select : Disabled
UART2 Use Infrared : Disabled
Onboard PCI IDE Enable : Both
IDE Ultra DMA Mode : Auto
IDE0 Master PIO/DMA Mode : Auto
IDE0 Slave PIO/DMA Mode : Auto
IDE1 Master PIO/DMA Mode : Auto
IDE1 Slave PIO/DMA Mode : Auto
ESC : Quit ↑↓→← : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2 : Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

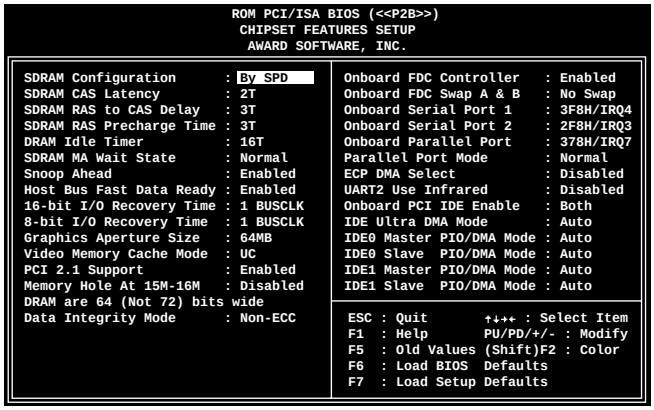
TXP4-X


ROM PCI/ISA BIOS (<<P5A>>)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.
SDRAM Configuration : By SPD
SDRAM CAS Latency : 3T
SDRAM RAS Precharge Time : 3T
SDRAM RAS to CAS Delay : 3T
Enhanced Page Mode Count : Disabled
Internal Page Detection : Disabled
SDRAM Pipe Function : Disabled
SDRAM x111-2111 Mode : Enabled
I/O Recovery Time : 2 BUSCLK
Graphics Aperture Size : 64MB
Frame Buffer Posted Write: Enabled
Force PCI_66 GAT Mode : Enabled
AGP BUS Turbo Mode : Enabled
Passive Release : Enabled
Delayed Transaction : Disabled
Memory Hole At 15M-16M : Disabledx
DRAM are 64 (Not 72) bits wide
Data Integrity Mode : Disabled
Onboard FDC Controller : Enabled
Onboard FDC Swap A & B : No Swap
Onboard Serial Port 1 : 3F8H/IRQ4
Onboard Serial Port 2 : 2F8H/IRQ3
Onboard Parallel Port : 378H/IRQ7
Parallel Port Mode : Normal
ECP DMA Select : Disabled
UART2 Use Infrared : Disabled
Onboard PCI IDE Enable : Both
IDE Ultra DMA Mode : Auto
IDE0 Master PIO/DMA Mode : Auto
IDE0 Slave PIO/DMA Mode : Auto
IDE1 Master PIO/DMA Mode : Auto
IDE1 Slave PIO/DMA Mode : Auto
ESC : Quit ↑↓→← : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2 : Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

P5A


ROM PCI/ISA BIOS (<P2L97>)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.
EDO Auto Configuration : Disabled
EDO Read Burst Timing : x333
EDO Write Burst Timing : x333
EDO RAS Precharge Time : 4T
EDO RAS to CAS Delay : 2T
SDRAM Configuration : 12ns SDRAM
SDRAM RAS to CAS Delay : Auto
SDRAM RAS Precharge Time : Auto
MA Wait State : Auto
SDRAM Banks Close Policy : Arbitration
16-bit I/O Recovery Time : 4 BUSCLK
8-bit I/O Recovery Time : 8 BUSCLK
Graphics Aperture Size : 64MB
Video Memory Cache Mode : UC
PCI 2.1 Support : Enabled
Memory Hole At 15M-16M : Disabled
DRAM are 64 (Not 72) bits wide
Data Integrity Mode : Non-ECC
Onboard FDC Controller : Enabled
Onboard FDC Swap A & B : No Swap
Onboard Serial Port 1 : 3F8H/IRQ4
Onboard Serial Port 2 : 2F8H/IRQ3
Onboard Parallel Port : 378H/IRQ7
Parallel Port Mode : Normal
ECP DMA Select : Disabled
UART2 Use Infrared : Disabled
Onboard PCI IDE Enable : Both
IDE Ultra DMA Mode : Auto
IDE0 Master PIO/DMA Mode : Auto
IDE0 Slave PIO/DMA Mode : Auto
IDE1 Master PIO/DMA Mode : Auto
IDE1 Slave PIO/DMA Mode : Auto
ESC : Quit ↑↓→← : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2 : Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

P2L97

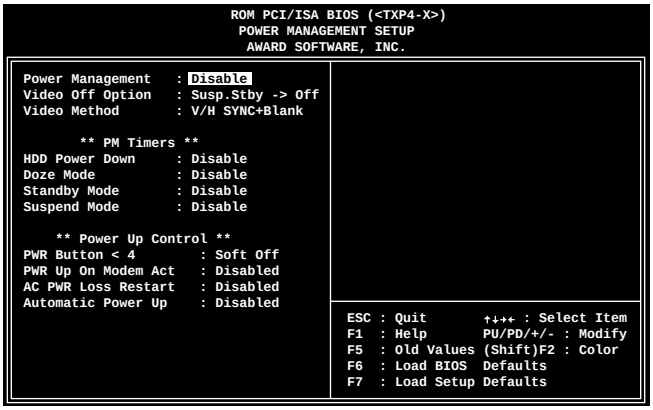

ROM PCI/ISA BIOS (<<P2B>>)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.
SDRAM Configuration : By SPD
SDRAM CAS Latency : 2T
SDRAM RAS to CAS Delay : 3T
SDRAM RAS Precharge Time : 3T
DRAM Idle Timer : 16T
SDRAM MA Wait State : Normal
Snoop Ahead : Enabled
Host Bus Fast Data Ready : Enabled
16-bit I/O Recovery Time : 1 BUSCLK
8-bit I/O Recovery Time : 1 BUSCLK
Graphics Aperture Size : 64MB
Video Memory Cache Mode : UC
PCI 2.1 Support : Enabled
Memory Hole At 15M-16M : Disabled
DRAM are 64 (Not 72) bits wide
Data Integrity Mode : Non-ECC
Onboard FDC Controller : Enabled
Onboard FDC Swap A & B : No Swap
Onboard Serial Port 1 : 3F8H/IRQ4
Onboard Serial Port 2 : 2F8H/IRQ3
Onboard Parallel Port : 378H/IRQ7
Parallel Port Mode : Normal
ECP DMA Select : Disabled
UART2 Use Infrared : Disabled
Onboard PCI IDE Enable : Both
IDE Ultra DMA Mode : Auto
IDE0 Master PIO/DMA Mode : Auto
IDE0 Slave PIO/DMA Mode : Auto
IDE1 Master PIO/DMA Mode : Auto
IDE1 Slave PIO/DMA Mode : Auto
ESC : Quit ↑↓→← : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2 : Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

P2B (similar to P2B-F & P2-99)

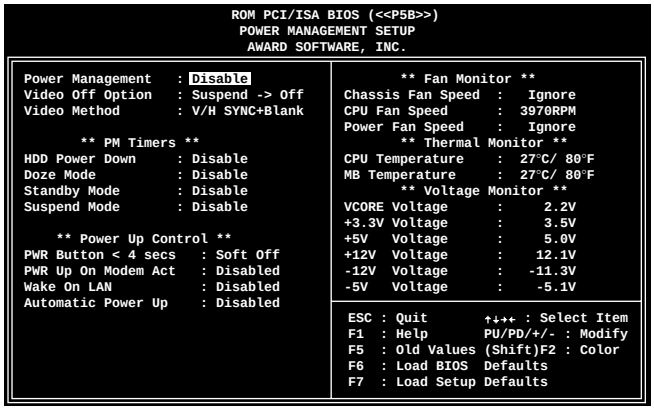
For added performance, the “Video BIOS Cacheable” should be set for “Enabled.” This option should be changed only if using an older video card or software which may conflict with this option.

To increase the performance of disk operations, the “IDE Ultra DMA Mode” should be set for “Enabled.” Provided that the hard drive which shipped from PCComplete is the only one installed, this should not cause any problems.

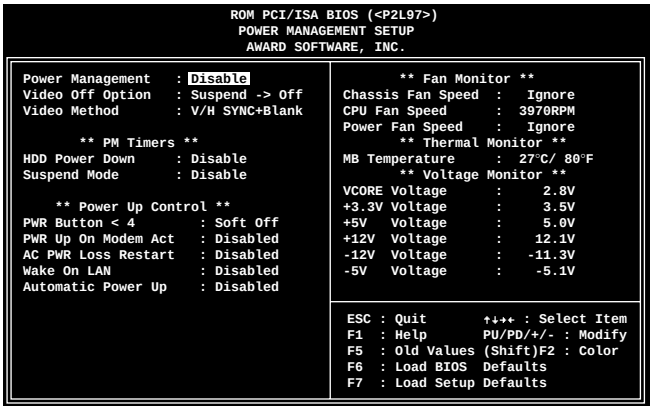
Power Management Setup


ROM PCI/ISA BIOS (<TXP4-X>)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.
Power Management : Disable
Video Off Option : Susp.Stby -> Off
Video Method : V/H SYNC+Blank
** PM Timers **
HDD Power Down : Disable
Doze Mode : Disable
Standby Mode : Disable
Suspend Mode : Disable
** Power Up Control **
PWR Button < 4 : Soft Off
PWR Up On Modem Act : Disabled
AC PWR Loss Restart : Disabled
Automatic Power Up : Disabled
ESC : Quit ↑↓→← : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2 : Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

TXP4-X (similar to P2-99)


ROM PCI/ISA BIOS (<<P5B>>)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.
Power Management : Disable
Video Off Option : Suspend -> Off
Video Method : V/H SYNC+Blank
** PM Timers **
HDD Power Down : Disable
Doze Mode : Disable
Standby Mode : Disable
Suspend Mode : Disable
** Power Up Control **
PWR Button < 4 secs : Soft Off
PWR Up On Modem Act : Disabled
Wake On LAN : Disabled
Automatic Power Up : Disabled
** Fan Monitor **
Chassis Fan Speed : Ignore
CPU Fan Speed : 3970RPM
Power Fan Speed : Ignore
** Thermal Monitor **
CPU Temperature : 27°C/ 80°F
MB Temperature : 27°C/ 80°F
** Voltage Monitor **
VCORE Voltage : 2.2V
+3.3V Voltage : 3.5V
+5V Voltage : 5.0V
+12V Voltage : 12.1V
-12V Voltage : -11.3V
-5V Voltage : -5.1V
ESC : Quit ↑↓→← : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2 : Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

P5A

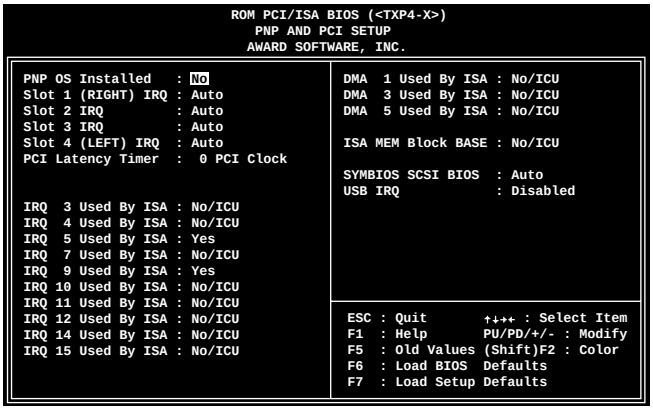

ROM PCI/ISA BIOS (<P2L97>)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.
Power Management : Disable
Video Off Option : Suspend -> Off
Video Method : V/H SYNC+Blank
** PM Timers **
HDD Power Down : Disable
Suspend Mode : Disable
** Power Up Control **
PWR Button < 4 : Soft Off
PWR Up On Modem Act : Disabled
AC PWR Loss Restart : Disabled
Wake On LAN : Disabled
Automatic Power Up : Disabled
** Fan Monitor **
Chassis Fan Speed : Ignore
CPU Fan Speed : 3970RPM
Power Fan Speed : Ignore
** Thermal Monitor **
MB Temperature : 27°C/ 80°F
** Voltage Monitor **
VCORE Voltage : 2.8V
+3.3V Voltage : 3.5V
+5V Voltage : 5.0V
+12V Voltage : 12.1V
-12V Voltage : -11.3V
-5V Voltage : -5.1V
ESC : Quit ↑↓→← : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2 : Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

P2L97 (similar to P2B & P2B-F)

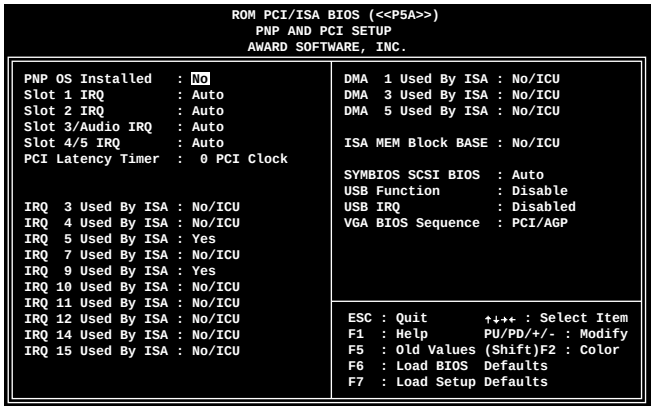
To avoid annoying and inconvenient power-ups at night, the “PWR Up On Modem Act” option should be “Disabled.” When enabled, this option will turn the computer on when a ring on the modem is detected. While this could be a nice feature for users wanting to call in from a remote location after hours, it does provide a sizable security hole and what may seem like random power-ups. Leave this option “Enabled” only with extreme caution.

On computers with monitoring it is advised that the applicable fan, thermal and power monitors be enabled. This includes the “CPU Fan Speed,” the “MB Temperature,” and all six of the voltage options. On some of the AMD K6-2, Celeron, and Pentium II/III machines the CPU fan does not connect directly to the main board so it can’t return data for the “CPU Fan Speed.” In this case leave the monitor set to “Ignore.”

PNP and PCI Setup


ROM PCI/ISA BIOS (<TXP4-X>)
PNP AND PCI SETUP
AWARD SOFTWARE, INC.
PNP OS Installed : No
Slot 1 (RIGHT) IRQ : Auto
Slot 2 IRQ : Auto
Slot 3 IRQ : Auto
Slot 4 (LEFT) IRQ : Auto
PCI Latency Timer : 0 PCI Clock
IRQ 3 Used By ISA : No/ICU
IRQ 4 Used By ISA : No/ICU
IRQ 5 Used By ISA : Yes
IRQ 7 Used By ISA : No/ICU
IRQ 9 Used By ISA : Yes
IRQ 10 Used By ISA : No/ICU
IRQ 11 Used By ISA : No/ICU
IRQ 12 Used By ISA : No/ICU
IRQ 14 Used By ISA : No/ICU
IRQ 15 Used By ISA : No/ICU
DMA 1 Used By ISA : No/ICU
DMA 3 Used By ISA : No/ICU
DMA 5 Used By ISA : No/ICU
ISA MEM Block BASE : No/ICU
SYMBIOS SCSI BIOS : Auto
USB IRQ : Disabled
ESC : Quit ↑↓→← : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2 : Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

TXP4-X


ROM PCI/ISA BIOS (<<P5A>>)
PNP AND PCI SETUP
AWARD SOFTWARE, INC.
PNP OS Installed : No
Slot 1 IRQ : Auto
Slot 2 IRQ : Auto
Slot 3/Audio IRQ : Auto
Slot 4/5 IRQ : Auto
PCI Latency Timer : 0 PCI Clock
IRQ 3 Used By ISA : No/ICU
IRQ 4 Used By ISA : No/ICU
IRQ 5 Used By ISA : Yes
IRQ 7 Used By ISA : No/ICU
IRQ 9 Used By ISA : Yes
IRQ 10 Used By ISA : No/ICU
IRQ 11 Used By ISA : No/ICU
IRQ 12 Used By ISA : No/ICU
IRQ 14 Used By ISA : No/ICU
IRQ 15 Used By ISA : No/ICU
DMA 1 Used By ISA : No/ICU
DMA 3 Used By ISA : No/ICU
DMA 5 Used By ISA : No/ICU
ISA MEM Block BASE : No/ICU
SYMBIOS SCSI BIOS : Auto
USB Function : Disable
USB IRQ : Disabled
VGA BIOS Sequence : PCI/AGP
ESC : Quit ↑↓→← : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2 : Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

P5A, P2L97, P2B, P2B-F, & P2-99

On the P5A main board, the BIOS default is for “Slot 3/Audio IRQ” to be set for IRQ 5. This **must** be changed to “Auto” to avoid a conflict with COM3.

The “PCI Latency Timer” should be left at “0 PCI Clock” to avoid problems.

When using an ISA serial card, the “IRQ # Used By ISA” options for 5 and 9 should be “Yes.” If the PCI card is being used, leave both of these options on “No/ICU.”

Password Prompts

Windows NT

Windows NT prompts for a username and password at log-on. The default for pre-loaded software to to have both the “Sable” and “administrator” passwords empty. Remember that you should always log in as “Sable” while running the POS.

BIOS passwords

It is possible (and fairly easy) for someone to set passwords on the BIOS. There are two different types of BIOS passwords. One will restrict the access to change the BIOS while the other can actually lock-out use of the computer from a start-up or reboot if the password is not entered correctly. **We do not recommend setting either type of password.** However, if the computer is in an area where it may be prone to pranksters entering passwords and therefore inhibiting use of the computer, you will want to set a “SUPERVISOR PASSWORD” (not a “USER PASSWORD”). Refer to the main board manual for further assistance.

Clearing BIOS passwords once they have been set

The only way to remove a BIOS password once it has been set is to completely clear the BIOS. This process restores all the computer’s settings to their factory defaults (not the operating system’s settings). To accomplish this requires that the computer be opened.

For more information about conducting this procedure contact PCComplete technical support.

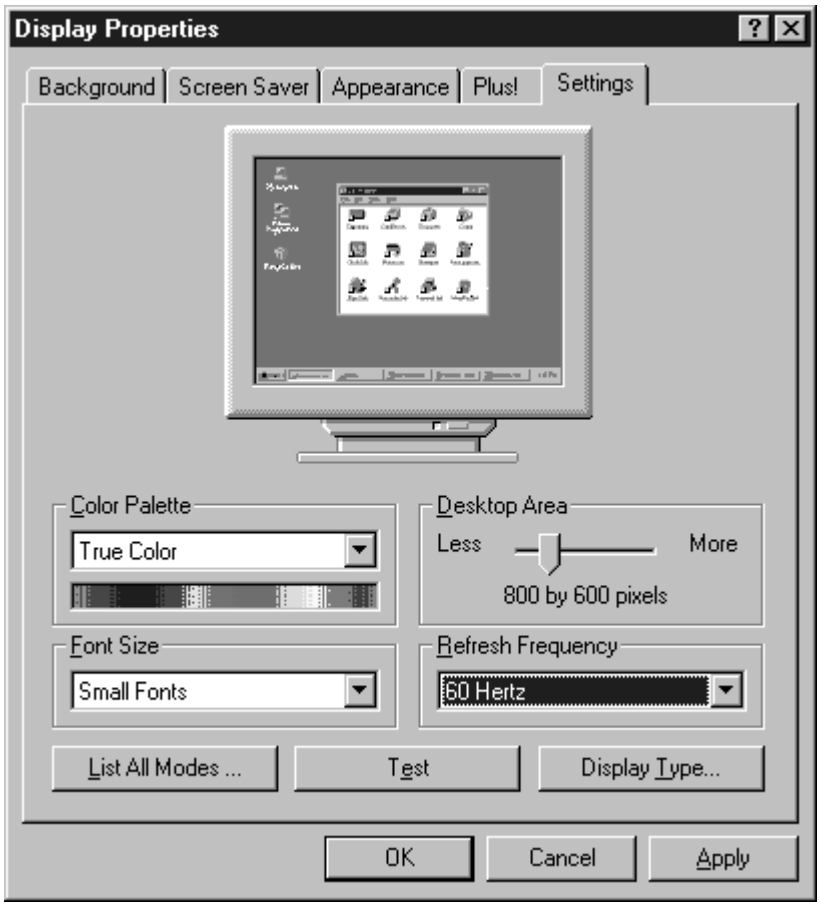
Video Driver/Black Screen Problem

Overview

In a few cases, users have either improperly configured their display adapter or had software corrupt the driver. The result is frequently a black screen after Windows NT loads. If the user selects VGA Mode the monitor will work properly, but only at 640 by 480 at 16 colors.

Solution

The best method to correct this problem is through pcAnywhere. If pcAnywhere is not set to start with Windows have the customer restart the computer in VGA mode and configure pcAnywhere to start with Windows. Restart the computer normally. Call in through pcAnywhere and go to the display properties. Set the monitor for "640 by 480" at "60 Hertz" and click on the apply button. The customer should now have an image on their monitor. Have them set the desired resolution and refresh rate, then hit test. Verify with the customer that they can see the test graphic on the monitor. If the client can see the graphic, click "Apply," have the customer close the display properties and verify that they can see everything. To be safe, restart the PC and have them complete log-in again. If the screen blacks out again, repeat the process in the "Administrator" user account.



Use the "Test" button after selecting the resolution and refresh rate.

If you are not able to log in through pcAnywhere, restart the computer in VGA mode. From VGA mode, remove the video drivers and install them from the original disk in both "Administrator" and "Sable." This will reset any improperly configured settings and replace any corrupted drivers.

To avoid future problems the display adapter must be set for modes supported by the monitor. The manual for the monitor should provide a list of compatible resolutions and refresh rates (note that all refresh rates will not work at all resolutions). The safest resolution is 640x480 with a refresh rate of 60Hz (most multi-syncing monitors support this mode). When using any other settings, make sure that the user always tests any resolution or refresh rate before setting it.

Another common problem is installing software not designed for Windows NT 4.0 (ie. Windows 95/98 software). Many of these programs can corrupt the video drivers in Windows NT, if not the operating system itself. Never install software which does not specifically support Windows NT 4.0.

Supported resolutions and frequencies

Any monitor will support only specific resolutions at specific frequencies. The owners manual for the monitor should list all of these video modes. Below are listings for common monitors shipped from PCComplete. This information is from the manufacturer's technical support departments and may have errors. It is always important to test the settings before accepting them.

KDS VS-4D 14" monitor

Resolution	Frequency (Vertical)
640 x 480	60/70/75/85 Hz
800 x 600	75/85 Hz
1024 x 768	60 Hz

OptiQuest Q41 & Viewsonic E40 14" monitors

Resolution	Frequency (Vertical)
640 x 480	50-90 Hz
800 x 600	50-76 Hz
1024 x 768	50-76 Hz

OptiQuest Q55 & Viewsonic E655 15" monitors

Resolution	Frequency (Vertical)
640 x 480	50-160 Hz
800 x 600	50-100 Hz
1024 x 768	50-87 Hz
1280 x 1024	50-66 Hz

Viewsonic E771 17" monitor

Resolution	Frequency (Vertical)
640 x 480	50-120 Hz
800 x 600	50-108 Hz
1024 x 768	50-87 Hz
1280 x 1024	50-66 Hz

Problems with Monitor Viewable Size

Screen too wide

Though the cause of this problem is not known, installers have have luck with this simple procedure. From display properties, change the resolution (is it is currently at 640 by 480 change it to 800 by 600, if current resolution is 800 by 600 change it to 640 by 480). Click the test button. When the Display properties window reappears set the desired resolution and refresh rate. Again, click test. If the test image looks correct, click on the “Yes” button when prompted. The display width should be correct now.

Problems Changing Video Driver

Overview

A problem has been encountered while trying to install or change video drivers on Sable POS computers. This problem will only occur if pcAnywhere is installed. Though Symantec's technical support claims to provide an alternate method which does not require the removal of pcAnywhere, we have not been able to do so successfully. Therefore it is necessary to remove pcAnywhere from the system before installing or changing a video driver.

Solution

Warning: This process involves three restarts and cannot be performed remotely.

Before starting this process, make sure that you have both the video driver and the pcAnywhere installation CD-ROM.

With the POS stopped click the "Start" button and select "Shut Down." When prompted, select "Close all programs and log in as a different user" and click "Yes." Log back in to the system as "Administrator."

Enter the control panel (double clicking the left mouse button on the "My Computer" icon, then choose control panel). Open the "Add Remove Programs" icon. Highlight "pcAnywhere32" from the list and click the "Add/Remove…" button. A dialog box will open listing the directory where pcAnywhere is located and asking if you want to remove it. Click the "Yes" button. Another dialog box will open asking if you want to remove shared files, click the "No to all" button. The program will then be removed and a box will open asking if you want to restart the computer, select "Yes." Wait for the system to restart. When prompted, login as "Administrator" again.

With pcAnywhere removed you can now install the appropriate video driver.

Once the video driver is installed and configured (this should all happen as the Administrator user) you will need to reinstall pcAnywhere. Insert the pcAnywhere CD into the drive and wait for the menu to load. When the install screen appears select "Install Software" and the installation will begin. The installation is routine with no changes needed to the default directory or preferences. Simply follow the on screen prompts to complete the installation. The computer will then ask if you wish to restart, click "yes" and wait for the system to reboot. Log in as "Administrator" again. Open pcAnywhere and a dialog box will open asking you to choose the modem to use. Select the modem you wish to configure and click "Next." You can now close pcAnywhere and reboot the system. Log in as "Sable." This should complete the configuration and you can start the POS.

Booting from CD-ROM

Without a ZIP drive

Without a ZIP drive installed, enter BIOS and change the boot sequence to “CD-ROM, C, A.” (For more information see the BIOS section of this publication or the User Manual from the main board.)

With a ZIP drive

In order to boot from the CD-ROM drive with a ZIP drive installed, the ZIP drive must be temporarily disabled. This process involves opening the case.

pcAnywhere notes

Start with Windows option

Do not leave this option selected – it will corrupt the Windows telephony.dll.

PCComplete Assembled Sable Computers and the Year 2000

The main board

All PCs shipped under the Sable Computer program should be Y2K compliant. To verify, check the BIOS revision against the chart below. In many cases, the machine will not be compliant if the BIOS revision is not as recent as the ones listed below, but will still work properly after December 31, 1999.

Main board	BIOS
TXP4-X	0108
P5A	1001
P2L97	1001
P2B	1002
P2B-F	1006
P2-99	1009

If the BIOS version of the PCComplete assembled computer does not meet or exceed these revisions, contact PCComplete. It may be necessary to perform a software upgrade on the BIOS. While this information is available on the ASUS web site (http://www.asus.com/), you may want to consult with a technician at PCComplete about how to enable BIOS updating as PCComplete normally disables this option before the PC is shipped. Should you attempt to upgrade the machine, remember to disable the BIOS updating to avoid the possibility of a virus attacking the BIOS.

Windows NT Workstation 4.0

Windows NT Workstation 4.0 is Y2K compliant with Service Pack 4. While the Service Pack 3 has been loaded on all Windows NT Workstation computers shipped from PCComplete, this only corrected for most of the Y2K problems. You may need to install the Service Pack 4 for full Y2K compliance. More information about this issue can be found at:

http://www.microsoft.com/technet/topics/year2k/product/user_view4614EN.htm

Below is the URL for downloading the NT 4 Service Pack 4. This installer is very large (about 17.6MB) and and should not be downloaded unless there are no alternatives.

http://www.microsoft.com/ntserver/nts/downloads/recommended/NT4SvcPk4/default.asp

To order the CD, point your browser to;

http://www.microsoft.com/ntserver/nts/downloads/recommended/NT4SvcPk2CDorder.asp

or call **800/370-8758**.

Service Pack 6 has been released but not yet tested with the Sable POS systems. This new updater is said to fix more problems with the year 2000 which existed in the previous service packs. More information will be available at a later date.

Appendix

Web sites for drivers & updates

Though we include drivers with all computers, you may have to download them at some point (either because the user has misplaced or damaged the driver or a newer version may be required). The following are some good places to look for the drivers.

Hardware Drivers/Updates

Motherboard	ASUStek	http://www.asus.com/support.asp
Display Adapter	ASUStek	http://www.asus.com/support.asp
	Biostar	http://www.biostar-usa.com/
	Jaton	http://www.jaton.com/
	nVIDIA	http://www.nvidia.com/
	S3	http://www.s3.com/customer_care.htm
I/O Card	SIIG	http://www.siig.com/driver.htm
	LAVA	http://www.lavalink.com/LIBRARY/TECHSUPPORT.HTML

Software Drivers/Updates

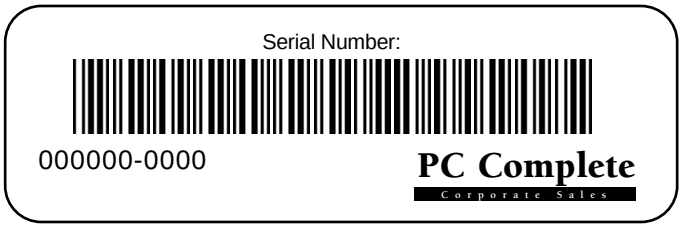
Windows NT	Microsoft	http://www.microsoft.com/
pcAnywhere	Symantec	http://www.symantec.com/us.index.html
McAfee VirusScan		

Memory upgrades on PCComplete computers

All computers supplied through the Sable program and that are covered in this Technical Note are capable of using PC100 168-pin SDRAM 3.3 volt DIMMs. Some earlier computers delivered by PCComplete to Elias Brother restaurants use EDO 72-pin SIMMs. The chart below should list all main boards used by PCComplete in systems for the Sable POS and what their RAM requirements are.

Motherboard	No. of slots	Module Type
Pentium/AMD K6		
8500TVX (Elias)	4 (added in pairs)	EDO 72-pin SIMM
VX97 (Elias)	4 (added in pairs)	EDO 72-pin SIMM (60 or 70 ns)
TXP4 (Elias)	4 (added in pairs) -or-	EDO 72-pin SIMM (60 or 70 ns)
	2	SDRAM 168-pin 3.3 volt DIMM
	Both SIMM and DIMM can not be used at the same time! (Most were SIMM)	
TXP4-X	4 (added in pairs) -or-	EDO 72-pin SIMM (60 or 70 ns)
	2	SDRAM 168-pin 3.3 volt DIMM
	Both SIMM and DIMM can not be used at the same time! (Most were DIMM)	
P5A	3	PC100 SDRAM 168-pin 3.3 volt DIMM
P5A-B (Upgrades)	3	PC100 SDRAM 168-pin 3.3 volt DIMM
Pentium II/III & Celeron		
P2L97	3	SDRAM 168-pin 3.3 volt DIMM
P2B	3	PC100 SDRAM 168-pin 3.3 volt DIMM
P2B-F	4	PC100 SDRAM 168-pin 3.3 volt DIMM
P3B-F	4	PC100 SDRAM 168-pin 3.3 volt DIMM
P2-99	2	PC100 SDRAM 168-pin 3.3 volt DIMM

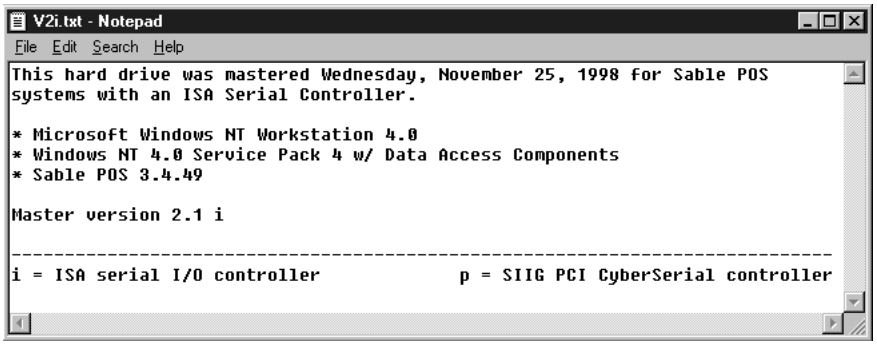
Information about a specific computer can be obtained through PCComplete with the serial number from the back of the computer. This serial number should have six digits, a dash, then four more digits.



Hard Drive Master Versions

The first version of the Sable POS hard drive shipped by PCComplete did not have any identifier. Version 2 and later have the drive label set by default to the master drive's version number, and a text file with information about the master drive.

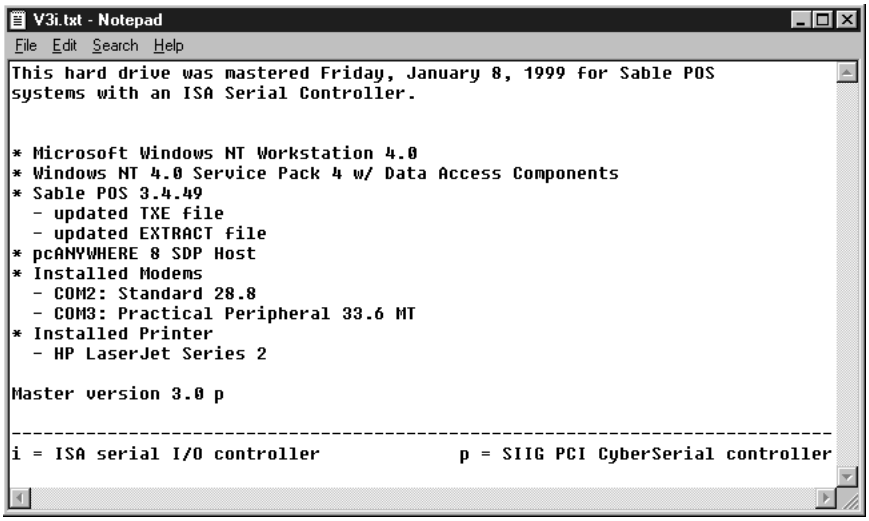
V2i.txt


V2i.txt - Notepad
File Edit Search Help
This hard drive was mastered Wednesday, November 25, 1998 for Sable POS
systems with an ISA Serial Controller.
* Microsoft Windows NT Workstation 4.0
* Windows NT 4.0 Service Pack 4 w/ Data Access Components
* Sable POS 3.4.49
Master version 2.1 i
i = ISA serial I/O controller
p = SIIG PCI CyberSerial controller

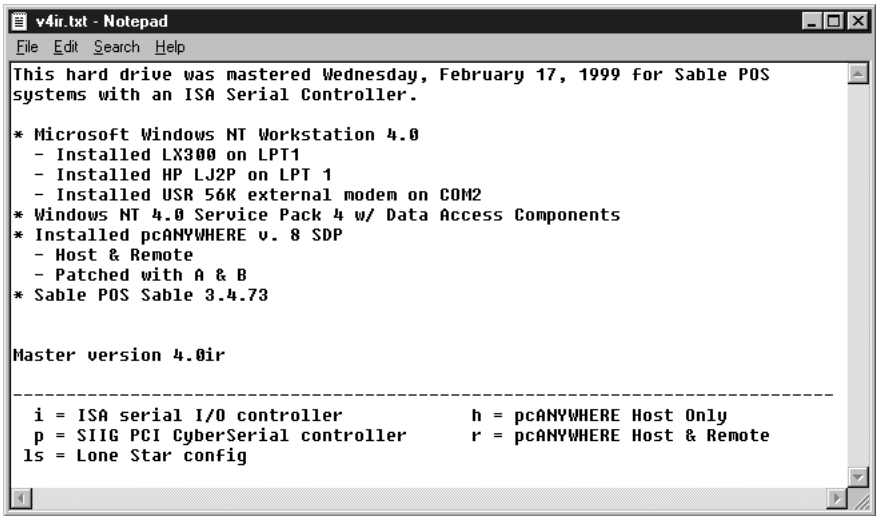
V2p.txt

(same as above, but with PCI I/O card software pre-installed)

V3i.txt


V3i.txt - Notepad
File Edit Search Help
This hard drive was mastered Friday, January 8, 1999 for Sable POS
systems with an ISA Serial Controller.
* Microsoft Windows NT Workstation 4.0
* Windows NT 4.0 Service Pack 4 w/ Data Access Components
* Sable POS 3.4.49
- updated TXE file
- updated EXTRACT file
* pcANYWHERE 8 SDP Host
* Installed Modems
- COM2: Standard 28.8
- COM3: Practical Peripheral 33.6 MT
* Installed Printer
- HP LaserJet Series 2
Master version 3.0 p
i = ISA serial I/O controller
p = SIIG PCI CyberSerial controller

v4ir.txt


v4ir.txt - Notepad
File Edit Search Help
This hard drive was mastered Wednesday, February 17, 1999 for Sable POS
systems with an ISA Serial Controller.
* Microsoft Windows NT Workstation 4.0
- Installed LX300 on LPT1
- Installed HP LJ2P on LPT 1
- Installed USR 56K external modem on COM2
* Windows NT 4.0 Service Pack 4 w/ Data Access Components
* Installed pcANYWHERE v. 8 SDP
- Host & Remote
- Patched with A & B
* Sable POS Sable 3.4.73
Master version 4.0ir
i = ISA serial I/O controller
h = pcANYWHERE Host Only
p = SIIG PCI CyberSerial controller
r = pcANYWHERE Host & Remote
ls = Lone Star config

v4pr.txt

v4pr.txt - Notepad

File Edit Search Help

```
This hard drive was mastered Monday, February 8, 1999 for Sable POS
systems with an ISA Serial Controller.

* Microsoft Windows NT Workstation 4.0
  - Installed LX300 on LPT1
  - Installed HP LJ2P on LPT 1
  - Installed USR 56K external modem on COM2
  - Installed USR 56K external modem on COM3
* Windows NT 4.0 Service Pack 4 w/ Data Access Components
* Installed pcANYWHERE v. 8 SDP
  - Host & Remote
  - Patched with A & B
* Sable POS Sable 3.4.73


Master version 4.0pr

-------------------------------------------------------------------------------
  i = ISA serial I/O controller            h = pcANYWHERE Host Only
  p = SIIG PCI CyberSerial controller      r = pcANYWHERE Host & Remote
 ls = Lone Star config
```

v4ls.txt

v4ls.txt - Notepad

File Edit Search Help

```
This hard drive was mastered Wednesday, February 10, 1999 for Sable POS
systems with an PCI Serial Controller.

* Microsoft Windows NT Workstation 4.0
  - Installed HP LaserJet 2 on LPT1
  - Installed Epson LX300 on LPT1
  - Installed USR Courier on COM2
  - Installed USR Courier on COM3
* Windows NT 4.0 Service Pack 4 w/ Data Access Components
* Installed pcANYWHERE v. 8 SDP
  - Host & Remote
* Installed Microsoft Excel from Lone Star site license
  - Typical Install


Master version 4.01s

-------------------------------------------------------------------------------
  i = ISA serial I/O controller            h = pcANYWHERE Host Only
  p = SIIG PCI CyberSerial controller      r = pcANYWHERE Host & Remote
 ls = Lone Star config
```

v41ls.txt

v41ls.txt - Notepad

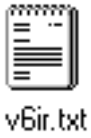
File Edit Search Help

```
This hard drive was mastered Wednesday, February 15, 1999 for Sable POS
systems with an PCI Serial Controller.

* Microsoft Windows NT Workstation 4.0
  - Installed HP LaserJet 2 on LPT1
  - Installed Epson LX300 on LPT1
  - Installed USR Courier on COM2
  - Installed USR Courier on COM3
* Windows NT 4.0 Service Pack 4 w/ Data Access Components
* Installed Sable POS 3.4.81
* Installed pcANYWHERE v. 8 SDP
  - Host & Remote
* Installed Microsoft Excel from Lone Star site license
  - Typical Install


Master version 4.11s

-------------------------------------------------------------------------------
  i = ISA serial I/O controller            h = pcANYWHERE Host Only
  p = SIIG PCI CyberSerial controller      r = pcANYWHERE Host & Remote
 ls = Lone Star config
```


v6ir.txt

v6ir.txt - Notepad

File Edit Search Help

```
This hard drive was mastered Thursday, August 23, 1999 for Sable POS
systems with an ISA Serial Controller.

* Microsoft Windows NT Workstation 4.0
  - Installed LX300 on LPT1
  - Installed HP LJ2P on LPT 1
  - Installed USR 56K external modem on COM2
* Windows NT 4.0 Service Pack 4 w/ Data Access Components
* Installed pcAnywhere v. 9 SDP
  - Host & Remote
  - Patched with A & B
* Sable POS Sable 3.4.81


Master version 6.0ir

--------------------------------------------------------------------------------
  i = ISA serial I/O controller            h = pcANYWHERE Host Only
  p = SIIG PCI CyberSerial controller      r = pcANYWHERE Host & Remote
 ls = Lone Star config
```

v7ir.txt

v7ir.txt - Notepad

File Edit Search Help

```
This hard drive was mastered Wednesday, September 29, 1999 for Sable POS
systems with an ISA Serial Controller.

* Microsoft Windows NT Workstation 4.0
  - Installed LX300 on LPT1
  - Installed HP LJ2P on LPT 1
  - Installed USR 56K external modem on COM2
* Windows NT 4.0 Service Pack 4 w/ Data Access Components
* Installed pcAnywhere v. 9 SDP
  - Host & Remote
* Sable POS Sable 4.0.50


Master version 7.0ir

--------------------------------------------------------------------------------
  i = ISA serial I/O controller            h = pcANYWHERE Host Only
  p = SIIG PCI CyberSerial controller      r = pcANYWHERE Host & Remote
 ls = Lone Star config
```

v7.2ir.txt

v7.2ir.txt - Notepad

File Edit Search Help

```
This hard drive was mastered Thursday, December 30, 1999 for Sable POS
systems with an ISA Serial Controller.

* Microsoft Windows NT Workstation 4.0
  - Installed LX300 on LPT1
  - Installed HP LJ2P on LPT 1
  - Installed USR 56K external modem on COM2
* Windows NT 4.0 Service Pack 4 w/ Data Access Components
* Installed pcAnywhere v. 9 SDP
  - Host & Remote
* Sable POS Sable 4.1.07


Master version 7.2ir

--------------------------------------------------------------------------------
  i = ISA serial I/O controller            h = pcANYWHERE Host Only
  p = SIIG PCI CyberSerial controller      r = pcANYWHERE Host & Remote
```

v7.3ir - Notepad

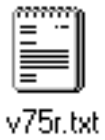
File Edit Search Help

```
This hard drive was mastered Wednesday, January 26, 2000 for Sable POS
systems with an ISA Serial Controller.

* Microsoft Windows NT Workstation 4.0
  - Enabled compression on C:\
  - Installed LX300 on LPT1
  - Installed HP LJ2P on LPT 1
  - Installed USR 56K external modem on COM2
* Windows NT 4.0 Service Pack 4 w/ Data Access Components
* Installed pcAnywhere v. 9 SDP
  - Host & Remote
* Sable POS Sable 4.1.07


Master version 7.3ir

--------------------------------------------------------------------------------
  i = ISA serial I/O controller            h = pcANYWHERE Host Only
  p = SIIG PCI CyberSerial controller      r = pcANYWHERE Host & Remote
```



v75r.txt - Notepad

File Edit Search Help

```
This hard drive was mastered Monday, May 2, 2000 for PCComplete
Assembled Sable POS systems with 4GB or larger hard drive.

* Microsoft Windows NT Workstation 4.0
  - Set-up with full 4GB primary partition
  - Installed HP DJ840C on LPT1
  - Installed LX300 on LPT1
  - Installed HP LJ2P on LPT 1
  - Installed USR 56K external modem on COM2
  - Installed USR 56K external modem on COM3
* Windows NT 4.0 Service Pack 4 w/ Data Access Components
* Installed IomegaWare for NT v1.13
* Installed pcANYWHERE v. 9 SDP
  - Host & Remote
* Sable POS Sable 4.1.16


Master version 7.5r

--------------------------------------------------------------------------------
  h = pcANYWHERE Host Only                 r = pcANYWHERE Host & Remote
 ls = Lone Star config
```